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Some Experiences IN BRONCHOSCOPY AND OESOPHAGOSCOPY.

BY

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(*With Special Plate.*)

THERE can be few accidents productive of more acute mental anxiety and physical distress than those caused when the entry of a foreign body into the lower air passages brings about an immediate difficulty in breathing. On rare occasions, but with less suddenness, a pathological lesion will effect the same results, and I will later describe a case in point. Similarly, lesser degrees of alarm and discomfort may follow the impaction of a foreign body in the oesophagus if it should happen to prevent or render difficult the natural and unhindered passage of food into the stomach.

It was as a method for the safe and successful treatment of such accidents that direct endoscopy first established itself and still remains without a rival, but its range of usefulness has been extended to the diagnosis and treatment of such pathological conditions in the lower air passages and the oesophagus as can be directly inspected by the surgeon. For such advances we are mainly indebted to the brilliant work of Chevalier Jackson (Philadelphia), and those interested in the subject will do well to read the report of his address given at the meeting of the British Medical Association at Bath in 1925.[1]

It will be my purpose in this communication to mention some of the more serious symptoms consequent upon the entry of a foreign body into the lower air passages or the oesophagus, and to emphasize how they may be avoided or minimized by the general practitioner who is usually the first to whom the patient applies. It may be more convenient to give the histories of six illustrative cases first of all and then to see what lessons may be learnt from them.

CASE I.—*A portion of rabbit bone lodged in a lower lobe of the right bronchus for sixteen months: Removal by peroral bronchoscopy: Recovery.*

I am indebted to Dr. Eric Gardner (Weybridge) for the following history of his patient's symptoms. "A married woman, aged 56, consulted me in the evening of October 11th, 1925. She thought she had asthma, although she had never had it before. For certain reasons the consultation was a hurried one, but I had time to notice that any slight exertion caused a definite inspiratory stridor, and that the movement of the right side of the chest was defective. I made no diagnosis, and arranged for a further and more detailed examination, because I suspected the possibility of a foreign body. At her second visit the following history was obtained. About three weeks previously she choked during dinner time, and a medical man living next door was sent for. He passed his finger down her throat and the spasm stopped. The next day any quick movement caused cough, and this became worse and was particularly noticeable when motoring against the wind. Meantime, difficulty in breathing increased and was accompanied by stridor. My examination revealed deficient air entry into the base of the right lung, and a small area below the angle of the right scapula where occasionally a few râles could be heard.

"A radiograph of the chest was taken by Mr. Charles Roberts (Woking), and showed a very indefinite linear shadow low down in the base of the right lung. On October 25th bronchoscopy was performed with a negative result.

"A few days later the patient was operated on for anal fistula and haemorrhoids and did not get out till the second week in December. In the meanwhile her cough had gone.

"She caught a severe cold, and, on December 31st, had one of the most terrible coughs I have ever heard. It failed to respond to any treatment, was incessant day and night, and was accompanied by expectoration. The evening temperature for four days was 104°. Physical signs were very indefinite; there were a few scattered râles in both bases, but more marked in the right.

"Improvement was slow except that the cough remained, and the patient went to the South of France in February, 1926. There the symptoms were very troublesome, but improved slightly during March and April, although talking, moving quickly, and cold air always brought it on, and it persisted during the summer. In September the patient went to Scotland, caught cold, the cough became very severe, and she expectorated a quantity of pus, which gave a certain amount of relief to the symptoms. She now noticed that the cough was always aggravated if she lay on her right side.

"On November 13th a second radiograph was taken and gave a clearer definition of the linear shadow seen in the first screening. An attack of influenza precluded another bronchoscopic examination while it aggravated the cough, which was very incessant day and night. The physical signs in the right base became very definite, and over a small area the breath sounds were loud and harsh. These conditions improved very slowly, and on January 18th she saw you."

Bronchoscopy.

On January 24th the patient was anaesthetized by Mr. Raymond Apperley, and on passing a small bronchoscope into the right lower lobe bronchus it was seen to be very congested when compared with the upper and middle lobe bronchi (Fig. 4). Some minutes were spent in removing the secretion and checking its formation by the application of a mixture of adrenaline and cocaine. Then a small bead of pus appeared in the mouth of a small bronchus, and on inserting the closed ends of Jackson's "mosquito," side-grasping, bronchoscopy forceps a grating sensation was felt. The foreign body was then grasped and removed, and proved to be a thin T-shaped piece of flattened bone 2 cm. in its long and 1 cm. in its shorter limb, and one end of the latter terminated in a sharp point.

A week after the operation the patient said, "I can talk and run upstairs. I can go out into cold air, and I can lie on my right side, and nothing makes me cough at all."

(It has been found impossible to reproduce for illustration the ill defined shadow of the foreign body as seen in the negative and radiograph.)

CASE II.—*A paper-fastener lodged for twenty-one months in the left lower lobe bronchus of a boy aged 7 years: Removal by peroral bronchoscopy: Recovery.* (Fig. 1.)

This case was reported in the BRITISH MEDICAL JOURNAL of November 18th, 1922 (p. 973), and readers interested in the subject are referred for details to that source. It will suffice to say that the chief symptoms were a chronic cough, the child "was always bronchial and short of breath, and the noise he made at night was like air passing through a small hole." In addition, there were frequent attacks of pyrexia after exertion, and examination of the chest by Dr. Batty Shaw showed definite physical signs of deficient air entry into the left lower lobe. Dr. Salmond's radiograph clearly showed the paper-fastener in the left bronchus, with the extended wings directed upwards.

On June 29th, 1922, I removed it by peroral bronchoscopy. The patient left the nursing home two days later and has remained well since. The operation was very difficult owing to the bleeding caused by oedematous granulations which surrounded and obscured the foreign body.

CASE III.—*Spicule of chicken bone removed from the oesophagus of a man four days after it had been swallowed: Cellulitis in the neck: Oesophagoscopy: Recovery.*

A man, aged 50, felt a sharp pain in his throat when eating some chicken. Shortly after dinner he experienced discomfort in the left side of his neck about the level of the collar bone, and at each succeeding meal difficulty and pain in swallowing increased. On the third day he could not swallow liquids. When I saw the patient he looked ill and distressed; temperature 100.6°. There was a diffuse and tender swelling over and in the neighbourhood of the lower half of the left sterno-mastoid.

He went at once into a nursing home, and four hours later and by direct oesophagoscopy I detected the bone about three to four inches below the entrance of the gullet. One end of the bone transfixed the mucous membrane, and on dislodging it about 3 drachms of intensely fetid pus escaped. A rubber feeding tube was passed through the gullet and a feed of egg, milk, and brandy was administered. The patient left the home in three days, and quickly recovered his normal health.

CASE IV.—*A splinter of rabbit bone impacted in the oesophagus for five days: Cervical cellulitis: Oesophagoscopy: Recovery.*

A man, aged 35, consulted me in 1924 because of increasing difficulty and severe pain on swallowing. The symptoms were ascribed to scratching the throat when he "was eating some of the stump of a broccoli."

I had known the patient as a typical English athlete, a playing member of one of the leading county cricket clubs and of a prominent Association football club. I mention these facts because of the dramatic change in his usual appearance since the above accident occurred. He was very weak, the complexion pale and sallow, and the eyes sunken; temperature 101.2°, pulse 110. The left side of the neck was diffusely swollen and very tender on pressure. I sent him to Dr. Salmond, who reported to me within an hour that the *x*-ray screen revealed a foreign body in the gullet about the level of the manubrium sterni.

The patient immediately went in a nursing home, and a few hours later I removed a spicule of bone 3 cm. long and 1 cm. broad. The sharp end was deeply embedded in the left wall of the oesophagus, and on gently dislodging it with Paterson's forceps

about an ounce of intensely foul pus escaped. When the flow had ceased liquid nourishment was administered through a stomach tube passed through the oesophagoscope. The following day sips of sterilized water were allowed and nutrient enemata administered. The patient recovered slowly but completely from his septic intoxication and left the home a week later.

CASE V.—*A denture which lodged in the oesophagus but passed into the stomach and remained there for nine weeks—the result of a delayed oesophagoscopy.*

History.—Shortly after midnight on January 13th, 1927, I received a telephone message from the hospital to say that a woman, aged 51, had swallowed her denture and that it could be seen on the screen in the cervical region of the oesophagus. From a considerable experience of this type of accident, and having been assured that the denture had no hooks, I felt confident it would involve no risk if it were allowed to remain *in situ* for a few hours longer. At 9 o'clock the same morning I passed an oesophagoscope, but found nothing in the whole length of the gullet. Later the same day the patient was again *x*-rayed, and the foreign body could be seen in the stomach, and here it remained until it was passed with the stools on March 22nd. In the meantime it had caused no trouble to the patient but an uneasiness in my mind which increased as week by week passed by, and this was not relieved by a surgical colleague who suggested that artificial teeth in the stomach might possibly be regarded as an "accessory organ of digestion." I presume he had in mind the gizzard of a bird.

The method which finally proved successful in getting rid of the denture was, in my experience, novel. The patient was given pieces of gauze to swallow, each being 6 in. by 5 in. and two layers thick, with each meal, and after five to six days the foreign body was evacuated and found to be entangled in some of the gauze.

CASE VI.—*Removal of a papillary granuloma from the proximal end of the right bronchus by peroral bronchoscopy: Recovery.* (Figs. 2 and 3.)

In March, 1918, Captain R. was "gassed" and kept in bed for a fortnight, and then invalided home for twelve weeks. During this time he noticed difficulty in breathing when he hurried, and in the following October there was occasional blood-spitting in the morning. He was demobilized in January, 1919, as C1, with 20 per cent. disability, though still dyspnoeic on exertion. In May, 1319, there was stridor on walking and much yellow expectoration. On June 16th he had marked stridor with impeded inspiration and expiration and distressing cough when lying down; there was recession of the supraclavicular fossae on inspiration, with feeble breath sounds around the root of the right lung. Bacteriological examination of sputum showed no tubercle bacilli, but numerous *M. catarrhalis*, streptococci, and coliform bacilli. The radiographer reported "some evidence of infiltration of the mediastinal contents at the level of the manubrium sterni."

On this same date (June 16) I saw him with Dr. MacWhirter of Clapham Common, and the mere exertion of walking into my house caused the patient extreme dyspnoea with both inspiratory and expiratory stridor. The laryngoscope revealed a reddish tumour at the lower end of the trachea, which moved downwards and upwards with inspiration and expiration, suggesting that the growth was pedunculated. Therefore we were confronted with what may be termed an "autogenous foreign body." We sent him straight into a nursing home, and the next day I removed the tumour by direct peroral bronchoscopy. In spite of the preliminary and free application to the growth of cocaine and adrenaline solutions, the first grasp of it in Paterson's forceps caused very free and a somewhat alarming degree of bleeding. This caused many delays, but ultimately all traces of the tumour were removed, and the patient made a rapid recovery and left the nursing home four days later. On September 28th, more than three months later, he expressed himself as being "as fit as I have ever been in my life."

The late Professor Shattock examined a portion of the tumour and described it as a "papillary granuloma." He agreed with the suggestion that it probably arose from proliferating granulations growing from a small ulceration caused by the inhalation of mustard gas.

I cannot recall any operation which gave me more anxiety during its performance or gratification on its successful issue. The physical distress of the patient was obvious and only equalled by a bravery and self-control which had not been undermined by months of suffering. The bleeding of the tumour from the moment it was seized was so free that it not only blotted out the restricted field in which one had to work but threatened an additional and possibly immediate danger if the left bronchus had become blocked by a clot. The pedicle of the tumour was attached to the posterior wall of the right bronchus close to its tracheal margin.

To these sources of mental anxiety were added the extremely tiring effect on the left arm of maintaining the bronchoscope in position in a man with a short, thick neck and a perfect set of teeth. (Endoscopists know full well how much easier it is to manipulate the direct tube in an edentulous patient.) Finally, the operation was performed during a heat wave, so that those who were actively engaged during the operation were eventually reduced to a condition of complete exhaustion.

(For fuller details of this unique case see the *Journal of Laryngology and Otology*, January, 1920.)

REFLECTIONS AND DEDUCTIONS.

The outstanding lesson which the history of these cases teaches is the *danger of delay*, with its obvious corollary that intervention should be immediate when the presence of a foreign body in the lower air passages or in the oesophagus has been diagnosed or even suspected from the history, the nature of the symptoms, or the results of radiographic examination.

What are the chief dangers and difficulties which may be engendered by delay?

1. *Shifting of the Position of the Foreign Body.*

If it has been proved by any or all of the methods of examination to have recently lodged in a bronchus, a violent fit of coughing may expel the foreign body upwards into the glottis or its immediate vicinity and cause a glottic spasm which may prove fatal in a few minutes.

Should the foreign body be like a nail or large-headed pin, which most frequently descend head first, severe coughing will with deep inspiration and forcible expiratory efforts often tend to make the object pass deeper and deeper by a kind of ratchet movement. It is needless to point out that a foreign body primarily lodged in a main bronchus would be infinitely easier to remove than when delay has allowed it to pass downwards into a smaller secondary bronchus (see Case I).

Again, an object at first detected in the lower airways may be coughed up and then swallowed, so that an unnecessary and fruitless search with the bronchoscope may result from a policy of waiting. Furthermore, it may be expelled from one bronchus and find its way into the other.

In the case of the oesophagus the passage of the foreign body into the gastro-intestinal tract frequently causes no trouble, especially if there are no sharp projections to impede its progress (Case V). Indeed, it is surprising what large objects have been swallowed and recovered later from the stools. It was probably with such experiences in his mind that an American general practitioner said, after looking over a large array of endoscopic instruments, "Waal, the best foreign body catcher I know of is the old-fashioned English bed-pan."

If it were established that a needle had passed into the stomach the question would arise, "Which is the greater risk, a laparotomy or the danger of perforation during the passage downwards of the foreign body?" Fatalities have followed perforation of the bowel by a needle, and knowing this the surgeon may be tempted to explore, but even with the help of an expert radiographer it may be very difficult to locate the exact portion of the small bowel in which the foreign body lies. Possibly it might be well to have the patient radiographed at least every day and for the surgeon to wait at any rate so long as the object continues to move downwards.

2. *The Swelling and Maceration of a Soft Foreign Body.*

Amongst the most difficult and dangerous objects which may enter the lower airways are those which quickly swell and become soft, such as a pea, bean, or nut kernel. Such an accident demands immediate intervention. Delay means maceration, and even with the highest skill particles may escape the most cunningly devised instrument and set up a diffuse and fatal form of bronchitis or broncho-pneumonia. From this point of view the peanut has a particularly evil reputation amongst our American colleagues.

3. *Septic Foreign Bodies.*

One of the most dangerous of these when it gains access to the lower air passages is a septic tooth or "filling" which has slipped from the forceps during extraction. In no circumstances should hesitation in searching for it be countenanced, because serious pulmonary symptoms of a septic nature are liable to set in very quickly, and the

rapid development of local inflammatory reaction around such a foreign body may render its detection and removal very difficult.

Cases III and IV prove how rapidly a sharp foreign body lodged in the oesophagus may endanger the life of the patient. In each case another day's delay might have meant the commencement of a quickly fatal mediastinitis. Valuable time should not be lost in trying the effect of quantities of new bread or other stodgy forms of food. The word "criminal" is scarcely too strong a term to use for the employment of bougies to push blindly the foreign body downwards or of probangs to draw it upwards. I am quite aware that many cases could be quoted in which these methods have been successful, but they involve a grave danger which it is not fair to risk if the safer and more certain procedure of direct endoscopy be available. Is this too great an assumption? I do not think so, because in these days of telephonic facilities and rapid transport, with skilled endoscopists in almost every city and large town, help would be available without dangerous delay. It may be asked, What should be done in a case of laryngeal spasm or severe stridor when delay seems out of the question and no skilled endoscopist could be obtained for hours or even a day? The obvious answer is, "Do a low tracheotomy." By this the risk of suffocation would be removed, and if the tracheal wound be held well open during any coughing fit the foreign body may be expelled through it or driven against it so that it can be removed. Should these desirable ends not occur, the later bronchoscopy will be very much easier because the tube can be passed through the tracheotomy wound instead of through the mouth, and a novice could scarcely fail in such circumstances to see and remove the *corpus delicti*.

As a pregnant instance of the danger of blind bougieing in the oesophagus the following case may be quoted. The patient was a middle-aged man, who was brought into University College Hospital in a moribund condition and with the history that he had swallowed his denture (Fig. 5, No. 15) during sleep two nights before admission. The morning after the accident two prolonged but ineffectual attempts had been made with bougies to force it into the stomach. On admission to hospital we were able to remove the denture by oesophagoscopy within five minutes. Pulmonary symptoms of a septic character developed, and the patient died on the third day. *Post-mortem* examination revealed two large sloughing perforations in the cervical portion of the gullet, and it was obvious that through one of these the bougie had passed four inches downwards into the left mediastinum. There was a large effusion of purulent fluid in the corresponding pleural cavity. Comment is needless. (For fuller details see *Lancet*, February 23rd, 1918.)

4. *The Significance of Certain Symptoms.*

The sudden onset of a cough in an otherwise normal patient should always arouse suspicion, and particularly in the case of children who, from fear of punishment or from ignorance, may afford no history of the accident. This difficulty will obviously arise if, unbeknown to the nurse, a foreign body be inhaled or swallowed before the child has begun to talk. I once removed the teat of a "comforter" from the oesophagus of an infant 4 days old; it had completely prevented nursing at the breast and, but for the fortunate confession of the nurse, more serious results might have followed.

Reference has been made already to the need for care in diagnosis when with cough and other symptoms suggestive of tuberculosis no tubercle bacilli have been found after repeated examinations of the sputum. Suspicion should be all the stronger if the physical signs in the chest be limited to one of the lower lobes of the lungs. In all such doubtful cases the services of a skilled radiographer should be insisted upon, and if his report be negative a careful examination should be made with the bronchoscope.

5. *The Silent Period.*

It not uncommonly happens that the first symptoms of irritation, such as cough, wheezing, and shortness of breath, pass off when the mucous membranes have become tolerant of the presence of a foreign body, and a latent or silent period follows. Too frequently this lulls both patient and surgeon into a sense of false security, with consequent dangerous optimism and delay. Such latent periods may last for hours, days, weeks, or years, but the day of reckoning is almost inevitable, and the technical difficulties of direct endoscopy, when this is ultimately carried out, may be increased to such a degree as to involve risks which would not arise in an early intervention.

6. *Increased Difficulties of Treatment.*

Cases I and II show that when a foreign body lodges in one of the bronchi prolonged delay in its removal will afford time for the formation around it of vascular and oedematous granulations which not only obscure the object but hinder its removal because of the profuse bleeding and secretion which must be controlled before the foreign body can be seized and withdrawn. If impaction has lasted long enough for cicatrization of the granulations to occur, the surgeon may be faced with the great difficulty of dilating a stricture before the release of the foreign body is possible.

RADIOGRAPHY.

There can be few exceptions to the rule that in every case where a foreign body is known or suspected to have been inhaled or swallowed the services of an *expert* radiographer should be enlisted. I emphasize the qualification because a poor skiagram is misleading and often worse than useless. In Case II the boy's chest was *x*-rayed shortly after the accident, but the heart and the neighbouring bronchial regions only revealed a homogeneous deep black shadow. It was assumed that no foreign body was present, and this resulted in twenty-one months' delay during which the patient suffered from serious pulmonary symptoms. Dr. Salmond's radiograph showed the paper-fastener very clearly through the heart substance, and a few days later it was removed. (See BRITISH MEDICAL JOURNAL, November 18th, 1922.)

Should there be an interval between the primary radiographic detection of the foreign body and the operation for its removal a second exposure should be carried out immediately before bronchoscopy or oesophagoscopy, because the foreign body may have moved from its original position. Had this been done in Case V oesophagoscopy would have been unnecessary.

It may be asked, Of what value would radiography be in the case of bodies not opaque to the *x* ray, such as fish-bones, bone buttons, glass beads, vegetable substances, macerated meat, etc.? The answer is, In such cases, though the object itself may not be rendered visible by radiography, its *position* can often be indicated.

(*a*) *Lung.*

If a foreign body so completely blocks a main bronchus that no air can enter or leave it, the lung tissue will soon give the physical signs and symptoms of atelectasis, and the radiogram will reveal a characteristic shadow. A more restricted effect will naturally result if a secondary bronchus be obstructed.

Should the object be of such a shape that air can be inspired through but not expired from a primary or secondary bronchus an obstructive emphysema beyond the location of the foreign body will result, and will be manifested if good radiograms be taken; these must be made with the shortest exposure, at the moment of full inspiration and deep expiration.

In the case of smaller non-opaque bodies which permit of unimpeded ingress and egress of air, the insufflation of bismuth subcarbonate or the injection of lipiodol may render its location determinable.

For fuller information on these problems and their treatment readers should refer to the masterly exposition of the subject by Chevalier Jackson in the BRITISH MEDICAL JOURNAL of October 17th, 1925.

(*b*) *Oesophagus.*

When such objects as spicules of bone or other non-opaque bodies are lodged in the gullet, a swallowed capsule of bismuth may be seen by the *x* rays to be held up at a definite spot. Small pledgets of wool soaked in bismuth

solution and swallowed may be caught up in the same way (H. K. Wilson). Bone buttons can frequently be detected after the swallowing of a bismuth solution.

Whether the foreign body be located in the larynx, the trachea, the bronchi, or the oesophagus, an antero-posterior and a lateral or lateral oblique *x*-ray examination should always be made. A comparison of the results thus obtained may be of the utmost value to the endoscopist.

Radiography is indeed the handmaiden of endoscopy, and her aid has often been and will continue to be of indispensable assistance in this branch of surgery.

In conclusion I make no apology for omitting any description or illustrations of the many types of endoscopes and instruments used with them; they can be seen in the surgical instrument catalogues, their number is legion, and they increase more rapidly than the foreign bodies which they are devised to deal with. Still less would it be worth while to dwell on the details of manipulative technique, because these can only be acquired by patient and pains-taking practice.

My object will be attained if those who have glanced through the histories of the cases which I have reported will learn from them some of the lessons which it has seemed worth while to emphasize.

REFERENCE.
[1] BRITISH MEDICAL JOURNAL, October 17th, 1925, p. 686.

NORMAL CHOLECYSTOGRAPHY.*

BY

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(*With Special Plate.*)

ON examining a number of cholecystograms it at once becomes evident that the shadow of the gall bladder varies in different individuals, both in size, shape, position, and density. Dr. Evarts Graham,[1] the pioneer of cholecystography, predicted in an earlier paper that the shadows of gall bladders would probably be found to vary in position with the different types of bodily habitus. This preliminary report is concerned with the cholecystographic investigation of 100 medical students at University College, London, after administration by the mouth of sodium tetra-iodo-phenol-phthalein, in the endeavour to determine primarily whether the characters of the shadows of gall bladders in normal individuals vary with the different types of bodily habitus. Comment is also made on the oral administration of the dye, and on the details of the radiological technique employed.

1. *Relation of Gall-Bladder Shadows to Bodily Habitus.*

The students, whose ages varied from 18 to 30 years, comprised 80 males and 20 females, and they were classified after the manner of Mills into the following types of bodily habitus. Mills[2] gives the chief characteristics of each of these types as follows (Fig. 1):

1. *Hypersthenic.*—Massive physique, great body weight, heavy bony framework, short wide deep thorax, relatively long abdomen of greatest capacity in upper zones, subcostal angle very obtuse, lungs wide at bases and contract sharply to apices which project but little above chavicles, long axis of heart nearly transverse, alimentary tract high in position, gastric motility fastest and tonus most marked of any type (stomach emptying time about 4 hours 22 minutes), colon high and short, caecum well out of iliac basin (even standing), transverse colon truly transverse, marked colonic tonus, and motility rapid. This group comprises about 5 per cent. of individuals.

2. *Sthenic.*—Resemble hypersthenic but characters less marked; considerable body weight, rather heavy bony framework, thorax somewhat short and deep, lungs widest at bases, heart moderately transverse, subcostal angle about 90 degrees, digestive tract high with good tonus, and motility fairly rapid (stomach emptying time about 4 hours 46 minutes). This group comprises about 48 per cent. of individuals.

3. *Hyposthenic.*—Frailty of build approaches that of asthenic type, visceral characteristics approach those of asthenics, but lack the extremely low position and peculiar form of such; tonus rather poor and alimentary motility somewhat slow (stomach emptying time about 5 hours 26 minutes); lungs intermediate in proportions, heart pendent. This group comprises about 35 per cent. of individuals.

4. *Asthenic.*—Frail slender physique, light body weight, delicate bony structure, long narrow thorax, short abdomen of least capacity in upper zones, marked disproportion between great pelvic capacity and capacity of upper abdomen (pelvis may be as wide and capacious as that of a hypersthenic of twice the body weight); subcostal angle narrow, lungs widest in upper zones and apices extend well above clavicles, heart pendent ("drop-heart"); gastro-intestinal tract low, stomach often largely pelvic when standing, colon long, caecum capacious and low in pelvis, poor tonus and motility slowest (stomach emptying time about 5 hours 43 minutes, and often not empty after 6 hours). This group comprises about 12 per cent. of individuals.

In the investigation here described radiograms of the gall bladder were taken, after administration by the mouth of sodium tetra-iodo-phenol-phthalein, with the radiological technique described below. The data obtained from the cholecystograms are given in the table. From these data the following deductions may be made.

1. The length of the gall-bladder shadow is not definitely related to the type of bodily habitus.

2. The breadth of the gall-bladder shadow is greater in the "better" types of bodily habitus (that is, in the hypersthenic and sthenic types).

3. The neck of the gall-bladder shadow lies at a higher level and at a greater distance from the mid-line of the vertebral column in the "better" types of bodily habitus.

4. The fundus of the gall-bladder shadow lies at a higher level and at a greater distance from the mid-line in the "better" types of bodily habitus.

5. The rate of emptying of the gall bladder (as indicated by the extent of reduction in the size of the shadow at 16½ hours—that is, two hours after taking a fatty meal) is quicker in the "better" types of bodily habitus.

6. The respiratory excursion of the gall-bladder shadow is greater in the "better" types of bodily habitus.

It must be noted that, though this table indicates that the length of the gall-bladder shadow is not definitely related to the type of bodily habitus, the *actual* length of the viscus may vary with the type of bodily habitus, because in the radiograms we have a more foreshortened view of the gall bladder in the "better" types of bodily habitus.

* This work was made possible by a grant from the Medical Research Council.

Table of Results in Various Types and at the Intervals Specified after Administration by the Mouth.

Type of Bodily Habitus.	No. of Cases.	Length of Gall-Bladder Shadow (Inspiration).	Maximum Breadth of Gall-Bladder Shadow (Inspiration).	Position of Neck of Gall Bladder at 1½ Hours (Inspiration).	Position of Fundus of Gall Bladder at 1½ Hours (Inspiration).	Respiratory Excursion.
Hypersthenic	6	1½ hrs.: 4.9–9.8 cm. 16½ hrs.: 2.6–5.3 cm.	1½ hrs.: 2.8–3.7 cm. 16½ hrs.: 1.2–1.9 cm.	Upper part D12–lower border L1 3.4–5.8 cm.	Lower part L1–lower border L3 4.2–8.5 cm.	2.5–4.9 cm.
Sthenic ...	44	1½ hrs.: 4.9–8.5 cm. 16½ hrs.: 2.8–6.1 cm.	1½ hrs.: 2.6–3.7 cm. 16½ hrs.: 1.2–2.8 cm.	Lower border D12–middle L2 2.2–5.6 cm.	Upper part L2–upper border L4 3.8–6.9 cm.	2.5–4.2 cm.
Hyposthenic ...	17	1½ hrs.: 5.4–8.0 cm. 16½ hrs.: 3.5–5.9 cm.	1½ hrs.: 2.5–3.5 cm. 16½ hrs.: 1.4–2.7 cm.	Middle L1–lower part L2 2.7–4.8 cm.	Lower part L2–middle L4 3.5–5.0 cm.	1.9–2.7 cm.
Asthenic ...	5	1½ hrs.: 6.0–9.8 cm. 16½ hrs.: 4.9–7.8 cm.	1½ hrs.: 2.0–2.6 cm. 1½ hrs.: 1.1–1.9 cm.	Upper border L2–lower border L2 2.7–4.0 cm.	Middle L1–lower border L4 3.4–4.5 cm.	1.5 cm.
	72					

FIG. 1.—Dr. Salmond's skiagram of patient's chest, showing the paper-fastener in the distal portion of the left bronchus.

FIG. 2.—Papillary granuloma removed from the posterior wall of the proximal end of the right bronchus.

FIG. 3.—Microscopic section of a portion of the tumour prepared by the late Professor Shattock.

FIG. 4.—Bronchoscopic views of the lower end of trachea and of the deeper aspects of the right and left main bronchi, with key. (1) Mouth of right upper lobe bronchus. (2) Bifurcation between (1), (3), and (4). (3) Mouth of middle lobe bronchus. (4) Openings of lower lobe bronchi. (5) Left main bronchus. (6) Mouth of left upper lobe bronchus. (7) Openings of left lower lobe bronchi.

FIG. 5.—Foreign bodies removed from bronchi (1 to 7) and oesophagus (8 to 15).

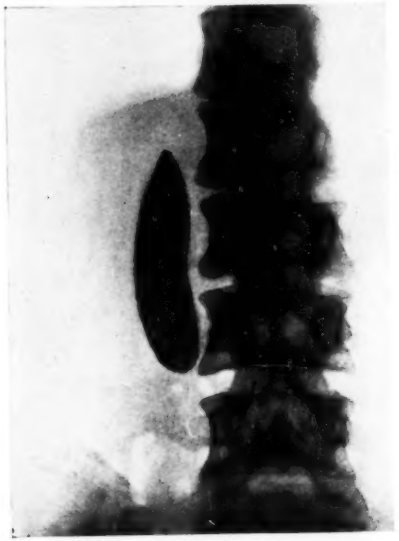
F. DAVIES: NORMAL CHOLECYSTOGRAPHY.

FIG. 1.

Hypersthenic.

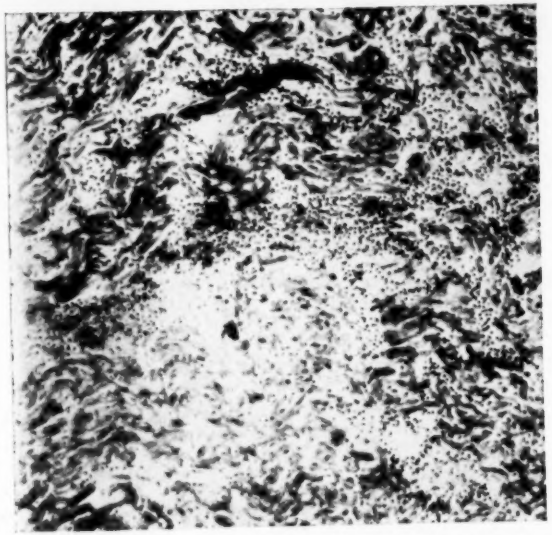
Sthenic.

Hyposthenic.



Asthenic.

J. S. GOODALL AND L. ROGERS: THYROTOXIC MYOCARDITIS.



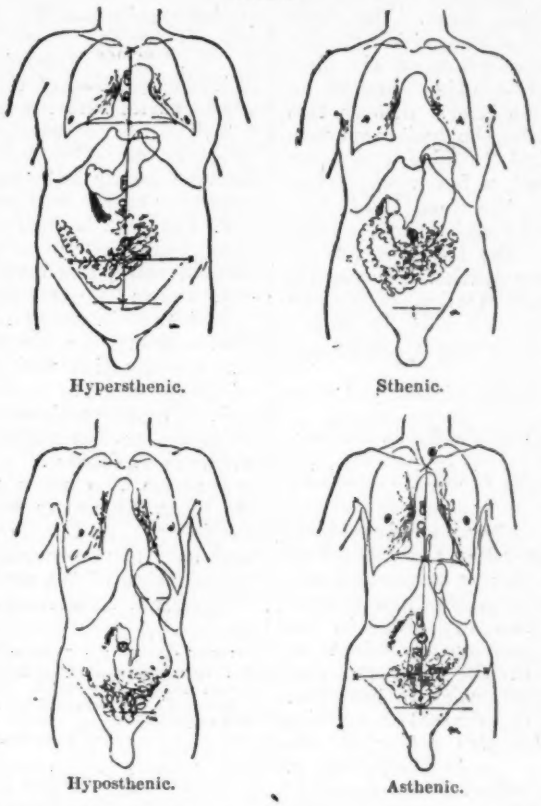
Microscopic appearance of a section of the wall of the left auricle of a woman, aged 21, who died from acute Graves's disease.

E. D. TELFORD AND J. S. B. STOPFORD: THROMBO-ANGIITIS OBLITERANS.

Fig. 2 shows the areas including the varying positions of the neck and fundus of gall-bladder shadows in each type of bodily habitus—for example, the neck and fundus of the gall-bladder shadow of a hypersthenic individual will normally be found to lie within the area 1. Fig. 3 shows an average gall-bladder shadow for each type of bodily habitus, the measurements being obtained from the averages of those in the table.

Mills showed that gastric motility and tonus varied with bodily habitus, the motility being fastest in the "better" types. The rate of emptying of the gall bladder is shown above to be quicker in the "better" types of bodily habitus. A definite correlation is thus indicated between gastric motility and rate of emptying of the gall bladder.

FIG. 1.



2. *Method of Administration.*

A dose of 5 grams of sodium tetra-iodo-phenol-phthalein was given to each student. It was made up in five gelatin capsules, each of which was coated a few hours before administration with stearic acid, the coating being thin and uniform. The capsules were swallowed at intervals during the course of the 7 o'clock evening meal, a fair quantity of water being drunk with the meal. To minimize evil effects, the student was advised to remain comparatively quiet during the evening. The following morning, without breakfast, the student presented himself for *x*-ray investigation at 9.30 o'clock (that is, 14½ hours after taking the dye). Then he took a fatty meal consisting of eggs, bacon, milk, cream, butter, etc., and at 11.30 presented himself for the second *x*-ray investigation (that is, 16½ hours after taking the dye, or 2 hours after the fatty meal). He then resumed his normal life. A dose of 5 grams is quite sufficient, as it was noted in a number of cases which showed a good gall-bladder shadow that some of the dye was still residing unabsorbed in the large intestine. Moreover, the more serious of the toxic symptoms that have been reported have generally been observed after larger doses. In this series of cases, with the above dosage and method of administration, toxic symptoms resulted in very few instances, and in these they were very mild, not sufficient to interfere with the work of the student or to cause any student to refuse to take the dye a second time if required. The symptoms comprised slight nausea shortly after swallowing the capsules (in 8 per cent.), slight vomiting soon after taking the dye (in one case), slight epigastric discomfort during the night (in 7 per cent.), slight headache in the morning relieved by breakfast (in 10 per cent.), or a nasty taste in the mouth in the morning variously described as "iodoform" and as "metallic" (in 10 per cent.). The dye is a natural purgative, and slight laxity of the bowels (not actually amounting to clinical diarrhoea) was exhibited in 20 per cent. of the cases. Recently I have been using a form of sodium tetra-iodo-phenol-phthalein which is almost free from toxic effect when administered as above described. Slight headache may occur, but is quickly dispelled by 10 grains of aspirin.

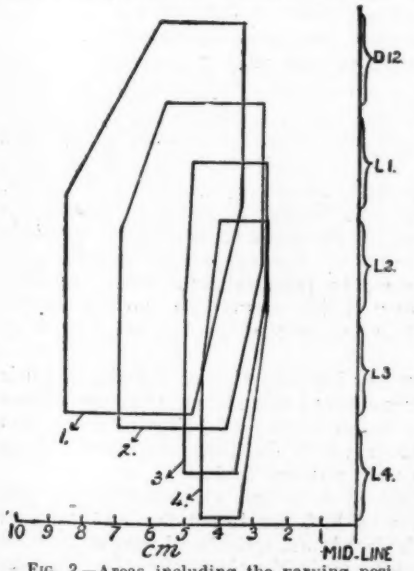


FIG. 2.—Areas including the varying positions of neck and fundus of gall-bladder shadows for each type of bodily habitus. 1, Hypersthenic; 2, sthenic; 3, hyposthenic; 4, asthenic.

3. *Radiological Technique.*

The following points are emphasized in the standardized technique which we have gradually come to employ. For this credit is due to Mr. Frederick Melville, radiographer at University College, London.

1. The tube should be centred over a point about a hand's breadth to the right of the spine of the second lumbar vertebra.
2. The radiogram is taken postero-anteriorly (P.A.)—that is, abdomen towards film.
3. The radiogram is taken at the end of inspiration.
4. The use of the immobilizing band is no definite advantage.
5. The Potter-Bucky diaphragm is always used.
6. Four types of tubes were used with no material difference in the results.
7. Tube condition: 30 milliamperes, 5-inch spark gap, tube distance 36 inches, exposure 4 to 6 seconds (depending on the size of the individual).

It will be noted that the tube distance is great (36 inches), the result of which is to reduce distortion. It was observed that the best cholecystograms were obtained in those films which did not show first-class bone definition—that is, those in which a smaller tube penetration was used as a result of the small spark gap (5 inches).

Comment.

In this investigation a positive "good" shadow of the gall bladder was obtained in 72 per cent. of the cases. This figure includes only those shadows from which definite measurements could be taken. Ill defined or doubtful shadows are not included. The number of positive results in the earlier cases was affected by the fact that the technique was somewhat experimental. It was necessary to determine by experience the best method of administering the dye and the most suitable radiological technique. The later cases showed a larger number of positive results. When the improved (and now constant) technique was employed it was found that of fifteen students who failed to give a positive result on the first investigation, nine gave

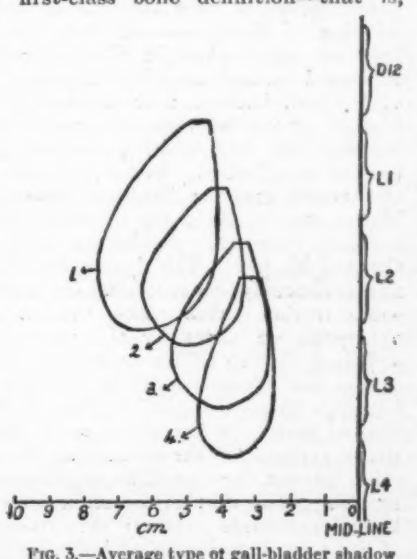


FIG. 3.—Average type of gall-bladder shadow for each type of bodily habitus (based on average position of neck and fundus and average breadth). 1, Hypersthenic; 2, sthenic; 3, hyposthenic; 4, asthenic.

a good gall-bladder shadow when the investigation was repeated six to twelve weeks later, using precisely the same technique. This is a matter of some importance, since many investigators have declared that the absence of a positive result with a reliable technique is the most certain evidence of disease of the biliary tract. The above evidence shows that a certain number of normal individuals may fail to give a positive cholecystogram on the first investigation, but give a good gall-bladder shadow on repeating the investigation some time later. Also in this series it was noted that two students who had previously given positive cholecystograms failed to give a shadow when the investigation was repeated a few weeks later, using the same technique. Evidently, therefore, the factors concerned in the production of a gall-bladder shadow must be liable to physiological variation. The following physiological factors are essential for the production of a positive cholecystogram after the oral administration of sodium tetra-iodo-phenol-phthalein:

1. A definite rate of absorption of the dye from the intestine.
2. A definite rate of specific excretion of the dye by the liver.
3. Entrance of the dye into the gall bladder in sufficient amount.
4. A definite degree of concentration of the dye-containing bile by the gall bladder.

It is possible that any of these factors may be subject to physiological variation which may affect the production of a positive cholecystogram. Have we any means of determining the adequacy of each of these factors and thus of observing any possible variations that may occur in the normal individual? It might be possible to obtain an index of the rate of absorption of the dye from the intestine by observing the rate of elimination in the urine (a small fraction of the dye being eliminated by this channel). The dye has a slight laxative action on the bowel and the greater part of the dye is eliminated in the faeces. No definite correlation between the degree of laxative action of the dye and the density of the shadow of the gall bladder was noted in this series. The rate of excretion of the dye by the liver can be checked by Rowntree's method of estimating the "global capacity" of the liver to eliminate similar dyes—for example, phenoltetrachlorphthalein. This is done by injecting intravenously a known quantity of a solution of this dye and estimating its rate of disappearance from the blood stream, or its rate of appearance in the contents of the duodenum aspirated through an Einhorn's duodenal tube. The filling of the gall bladder with dye-laden bile from the liver is brought about by a mechanism at the termination of the common bile duct which resists the passage of bile direct to the duodenum. It is possible that this resistance mechanism may be liable to physiological variation. As Mann[3] states, it is not known what percentage of bile normally enters the duodenum without previously entering the gall bladder. The dye in the bile leaving the liver is not sufficiently concentrated to produce a shadow. The concentration takes place in the gall bladder by the absorption of water by the wall of the viscus. For a sufficient degree of concentration to take place the wall of the gall bladder must be healthy, but the process may be liable to physiological variation. The degree of absorption of water by the gall bladder may be affected by the water content of the tissues at the time. There may be other factors, besides those mentioned, which are necessary for the production of a gall-bladder shadow, and physiological variations in these may likewise modify the results of an *x*-ray investigation of the biliary tract.

The complexity of the physiological processes underlying the production of a gall-bladder shadow is such that even on prima facie grounds the statement that absence of a shadow (*per se*) always indicates a pathological state seems unwarranted. Moreover, the above observation that a normal individual may fail to give a shadow on the first investigation but give a positive result on repeating the investigation is in direct conflict with such a statement. It thus appears that a negative cholecystogram *per se* (that is, in the absence of clinical evidence of disease of the biliary tract) is of less diagnostic value and significance than positive cholecystographic evidence of disease. Likewise, if a shadow be produced, the above factors will undoubtedly have an influence upon the density of the shadow, so that too much weight must not be attached to diminished density of the shadow as an indication of a pathological state.

Summary and Conclusions.

1. The position of the gall-bladder shadow in cholecystograms varies with the type of bodily habitus. (See Fig. 2.)
2. The rate of emptying of the gall bladder varies with the type of bodily habitus. A correlation is established between bodily habitus, gastric motility, and the rate of emptying of the gall bladder.
3. The oral method of administration of sodium tetra-iodo-phenol-phthalein, using the technique described, is reliable, safe, and comparatively free from toxic effects.
4. The radiological technique described is reliable.
5. A certain number of normal individuals may fail to give a shadow on the first investigation, but on repeating the investigation with precisely the same technique many of these may give a positive result.
6. A negative cholecystogram, in the absence of clinical evidence, is less reliable than positive cholecystographic evidence of disease.

I desire to express my thanks to my chief, Professor G. Elliot Smith, at whose suggestion this work has been carried out, and to Mr. H. A. Harris for valuable advice and help in the investigation. I also wish to express my appreciation of the medical students of University College who offered themselves as subjects for this investigation.

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TWO CASES OF THROMBO-ANGIITIS OBLITERANS IN WOMEN.

BY

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(*With Special Plate.*)

THE symptoms of thrombo-angiitis obliterans are already becoming widely known, thanks to the reporting of cases by several observers, and it is not likely that much more is to be gained by the bare recording of further instances. The rarity of the lesion in women is, however, one of the extraordinary features of the disease. Buerger,[1] to whom much of our knowledge of the subject is due, states: "So rare is the disease in females that doubt has been cast on the possibility of its occurrence outside of the male sex." He further states that he has observed only three cases.

In the course of further investigation of thrombo-angiitis obliterans we have encountered two instances of the disease in women. These we think worthy of being recorded, not only by reason of their rarity in that sex, but because each presents certain very unusual features.

Dr. Williams of Salford drew our attention to the case of a woman patient who had continued for no less than twelve months with the left hand, wrist, and part of forearm in a condition of total mummification. By the kindness of Dr. Williams we were able to make an examination of the case and to obtain a photograph. Short details of the case are as follows:

A married woman, aged 52, British born, stated that her trouble began, some fifteen months ago, with severe aching pain in the index and middle fingers of the left hand; she noticed that they were "slightly blue." Within three weeks the whole hand was aching very severely; it was "cold and dark red." She continued in this way for three months, and at the end of this time the hand, wrist, and lower part of the left forearm were in a condition of black-dry gangrene. The pains then ceased, and when we saw her the condition of the limb had shown no change

whatever for twelve months. The state of the hand is well shown in the photograph (see Special Plate).

Her previous medical history was good and without incident; she had had eight healthy children, all now grown up. For the greater part of her life she had worked in a dye works, with her hands continually in cold running water.

The condition of the heart is normal, and the state of the pulse in the main arteries is as follows: In the affected arm the pulse fails entirely just below the clavicle, and no pulse is to be felt in any vessel of the limb. The pulse in the head, neck, and right arm is normal. In both lower extremities a slight pulse can be felt in the popliteal artery, but at no other point below this. In all that part of the left arm which is alive sensation is normal, as tested by touch, heat and cold, pain, and joint sense. No active treatment was urged as the gangrenous hand was giving no trouble and the patient's general condition was poor; she died shortly afterwards from "malignant ovarian cyst." Unfortunately it was not possible to obtain specimens of the blood vessels for examination.

We owe the opportunity of studying the second case to Dr. Wilson of Cheadle, who informed us that he had under his care a woman in whom he was unable to feel a pulse in either arm. A short summary of the case is as follows:

A married woman, aged 48, British born, first noticed weakness of the left hand six years ago; this weakness progressed, and there was tingling and aching of the forefinger. Within a year the right arm followed the same course as its fellow, but the trouble on this side has never been so severe.

Examination of the arms shows that both are weak and much wasted. There is no alteration of sensation and no sign of any nervous lesion. No discoloration or other gross evidence of circulatory trouble is apparent. The extraordinary fact is that at no point in either limb can any subclavian, axillary, brachial, radial, or other pulse be found. The pulse in the head and neck is normal. The patient stated that her legs were very easily tired, and "often went to sleep." In the right lower extremity a very diminished and feeble pulse can be felt in all the large vessels, whilst on the left side no pulse is felt in or below the popliteal artery. The superficial and common femoral pulses on this side are very faint.

It may reasonably be objected that in the absence of histological proof these two cases may not be true instances of thrombo-angiitis obliterans. We think, however, that they must be regarded as such, and from what is now a fairly extensive experience of the disease the clinical features of these cases leave no doubt in our own minds.

Their interest lies, not only in the rarity of the disease in women, but in the fact that the two patients illustrate very opposite types. Cases of thrombo-angiitis obliterans have been noted to vary in intensity and rapidity of development within very wide limits, and we have in these two patients almost the extremes of acute and chronic types. In the first case the period between the onset of symptoms and the occurrence of total gangrene was but three months. In this patient the thrombosis had spread throughout the arm with such rapidity as to preclude entirely any successful attempt at collateral circulation. In the second case the course is extremely chronic. The patient dates her symptoms from six years ago, and it is evident that the change for the worse has been very slow. Whilst there is no pulse to be felt in either arm, it is plain that plenty of time has been given for the setting up of a good collateral circulation. There is, in fact, evidence that the history of this case is in reality very much longer than six years. The patient states that at her last confinement both doctor and nurse were surprised to find that no pulse could be found in either arm; this confinement was no less than sixteen years ago.

We are as yet no nearer to the cause of this strange disease. It is by no means peculiar to the Jewish race; all our cases have been of pure British blood. Meleney and Miller[2] describe twenty-four cases from Peking, and Whyte[3] in two papers has reported many cases in Chinese patients. He says that the disease occurs in nearly all the provinces of China. All observers are agreed that it appears to have no relation to syphilis.

Where so much difficulty exists it is worth while to take note of any suggestions made by the patients themselves, and in this respect four of our patients have attributed their condition to prolonged exposure to cold and wet. An electrical linesman stated that he had worked out of doors in wet clothes for years, and another patient, who was a slater, stated that his affected leg was the one which was always uppermost in his habitual position when slating a roof, and had been often soaking wet for hours together. Another of our patients was a lifelong enthusiast as a fly fisherman, and stoutly attributed his condition to wading, whilst in one of the cases we report above the woman had worked most of her life with her hands in cold running water. We have also seen several cases of thrombo-angiitis obliterans in the lower extremities of pensioners who were exposed to long and frequent spells of cold and wet in trench warfare.

Whilst it is not likely that this exposure is a direct cause, yet it seems possible that it may act as a predisposing factor in susceptible patients. These instances are, however, too few to be worthy of any stress, and we wish to do no more than merely to place them on record as facts which in the history of our cases have emerged with some frequency.

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THE ELECTRICAL AND HISTOLOGICAL MANIFESTATIONS OF THYROTOXIC MYOCARDITIS.*

BY

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(*With Special Plate.*)

THE myocardium resembles other muscles of the body in its properties of irritability, conductivity, contractility, and tone. These are definitely specialized in different regions and fulfil specific purposes in the mechanism of the circulation. For example, irritability is specialized in the region of the sino-auricular node and dominates the beat, the most irritable part of the myocardium always determining the contraction. Tonicity is specialized in the region of the rings, its function being to maintain the competence of the valves. Contractility is specialized in the walls of the ventricles and provides the energy for the circulation, while conductivity—the most differentiated of all the functions of the myocardium—is localized in the special conducting system.

Should the myocardium become poisoned (toxic myocarditis), or degenerated (degenerative myocarditis), the signs and symptoms produced are determined chiefly by this specialization of function. If, for example, the auricle is the part chiefly picked out, auricular phenomena, extrasystoles, auricular paroxysmal tachycardia, flutter, or fibrillation (paroxysmal or established) may result, with the consequent irregularity and rapidity of the pulse. If the bundle of His, or some other part of the conducting system, is affected, one of the specific defects of conductivity—for example, heart-block, main branch or arborization block—may result, with its consequent slow pulse and syncopal attacks; whereas, if the ventricular wall itself is chiefly picked out, ventricular extra-systoles, paroxysmal ventricular tachycardia, or even ventricular fibrillation may ensue.

A general poison, either endogenous or introduced from without, nearly always acts first on some special part of the myocardium, which is determined, not necessarily by any special affinity of the poison, but by a pre-existing damage, strain, or fatigue of the particular part. For example, it is well known that in rheumatic affections of the myocardium digitalis in toxic doses will sometimes couple the beat and sometimes produce heart-block. A coupled beat is, in most cases, due to a dominant beat rising in the sino-auricular node and an ectopic beat rising from

* Abstract of a demonstration at the Annual Meeting, Nottingham, 1926.

the right ventricle; the reason the right ventricle first succumbs to the action of the digitalis is, I think, due to the fact that it is the right heart which is usually strained, fatigued, or damaged in those cases (such as mitral stenosis) to which digitalis is most often administered. On the other hand, the cases which develop heart-block on digitalis poisoning are those in which the bundle of His is relatively most damaged.

Although the above statements are generally true, most slowly acting poisons which affect the myocardium decrease its tone and usually raise its irritability as well. In thyrotoxicosis the first symptom is usually tachycardia, at first intermittent, then continuous, followed in the later stages by cardiac irregularity, myocardial exhaustion, and even sudden death.

Electro-cardiographic Manifestations.

Of the different waves in the normal electro-cardiogram we may say briefly that P equals the auricular complex; Q, R, S, T the ventricular complexes.

In the minor degrees of thyroid poisoning the electro-cardiogram shows a tachycardia of physiological type, P, Q, R, S, and T being present, but there are certain definite peculiarities in the form of the curve. Whereas in an effort tachycardia the T wave is always larger than the P, in thyroid tachycardia the T and P are approximately equal, while in mitral stenosis a tachycardia of similar grade is characterized by the P_2 wave being bigger than the T_2. If the tachycardia is of a higher grade the T and P waves are superimposed; it is thus possible to distinguish easily at a glance these three types of physiological tachycardia. The prolonged tachycardia becomes associated with a definite left-sided preponderance, while the continued action of the toxin produces distinct evidence of myocardial damage, the conducting system being specially picked out, so that there is impaired conduction in the bundle of His, the P-R interval being increased in some cases to as much as 0.3 of a second; in other cases the right main branch is picked out, so that there is a definite right bundle block with consequent impaired efficiency in the pulmonary circuit. This is particularly liable to occur in the pneumo-mechanical heart of the toxic adenoma; at a still later date the arborization branches of the bundle of His may be involved.

In the later stages of mild cases of thyrotoxicosis, or in the early stages of very acute ones, the heart may become irregular owing to auricular fibrillation and then the normal co-ordinate contraction of the auricular muscle fibres does not occur; the different bands of auricular muscle contract irregularly and more or less independently. The degree to which this dissociation and inco-ordination has occurred determines whether the resulting fibrillation is of the so-called coarse or fine variety. In my own series of cases 15 per cent. showed auricular fibrillation, 10 per cent. exhibiting the condition before, and 5 per cent. developing it after operation. Generally speaking, the condition develops after the disease has been in progress for some years, and must be regarded as indicating that the myocardium is profoundly poisoned or that degeneration has definitely commenced. Occasionally Graves's disease starts with auricular fibrillation, and in these cases the condition usually persists. Not infrequently (about 5 per cent.) auricular fibrillation develops during or soon after operation on the thyroid, and may occur after any operation, from simple ligation to extirpations of varying extent. Usually the condition is only temporary. Its onset is often synchronous with a rise in blood pressure.

On the other hand, cases of Graves's disease which show auricular fibrillation, which may in some cases have persisted for years, are frequently cured of the fibrillation after removal of the greater part of the thyroid, especially if they are treated by quinidine, which appears to influence materially many of these cases after partial thyroidectomy. The cure of fibrillation by removal of the thyroid is now a recognized treatment. Appended is a summary of the electro-cardiographic findings in 787 thyrotoxic hearts.

Analysis of Electro-cardiographic Findings in 787 Cases of Thyroid Hearts.

	Series.				Total.
	I.	II.	III.	IV.	
Number of Cases	264	225	150	148	787
Preponderance:					
Left	57	41	68	18	184
Right	29	36	24	19	108
P-R + ...	152	47	9	34	242
Auricular fibrillation	39	25	6	21	91
Branch block, right	—	1	3	1	5
Extra-systole:					
Auricle	—	2	2	1	5
Ventricle	—	7	4	8	19
T waves modified:					
T1	—	14	9	—	23
T2	—	11	35	—	46
T3	—	11	102	—	113
R-S complex abnormal	20	1	12	—	33

The electro-cardiographic findings in these 787 cases may be summarized as follows:

242 cases showed impaired conduction in bundle of His.
184 cases showed a left-sided preponderance.
113 cases modification of the T wave in the third lead.
108 cases showed a right-sided preponderance.
91 cases auricular fibrillation.
46 cases modification in T wave in lead ii.
33 cases showed modification in R-S complex.
23 cases modification in T in lead i.
19 cases ventricular extra-systoles.
5 cases right branch block.
5 cases auricular extra-systoles.

Histological Appearance of Myocardium in Fatal Graves's Disease.

The illustration shows a section of the heart muscle of a woman, aged 21, who died from acute Graves's disease, from which she had been suffering for a year.

She had been in good health until the onset of the disease, and then presented the cardinal signs of goitre, exophthalmos, tachycardia, and tremors. The pulse was fast and regular, and there was no heart-block nor auricular fibrillation. Rest in bed and six months' medical treatment proved ineffective, but at the end of this time she was temporarily improved by polar ligation of the right superior thyroid artery, under local anaesthesia. Six weeks later the left superior artery was tied, but, following this, the thyroidism became more acute. She died forty-eight hours afterwards from failure of the right side of the heart, which at the necropsy was found to be very dilated. The pericardium, endocardium, and valves appeared healthy, and, on cutting the muscle, no gross change was noticed.

The sections, however, show the presence of an active and advanced myocarditis (see special plate), evidenced by the number of polymorphonuclear leucocytes surrounding the vessels and spreading between the muscle fibres, and also by the presence of a patchy necrosis of bundles of muscle fibres. The necrosed bundles have taken the stain badly, are swollen and lack definition, while the nuclei are swollen also.

The part of the heart least affected is the base in the region of the bundle of His; the most marked degenerative change is in the ventricles, particularly the right, where necrosis is most apparent.

Although somewhat similar changes have been described by Continental and American workers, as yet in this country little attention has been drawn to the subject of myocarditis in Graves's disease. The writers have since collected records of eight other cases in which the histological findings were similar to those here described.

CLOSURE OF ABDOMINAL INCISIONS.

BY

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THE high incidence of faulty wound union in abdominal incisions leaves ample scope for improvement in the technique of closing the abdomen.

A recent American writer[1] found that faulty union occurred in 12 per cent. of clean abdominal wounds closed with absorbable sutures. In contaminated wounds, closed in the same manner, the percentage rose to 80 per cent. These figures, he found, could be considerably reduced by using for the fascial layer a continuous suture of twisted silk. The suture was passed through the skin beyond the extremities of the wound, and could thus be removed at a later date. Continuous silk, even though removable, is prima facie not the suture of choice in contaminated wounds.

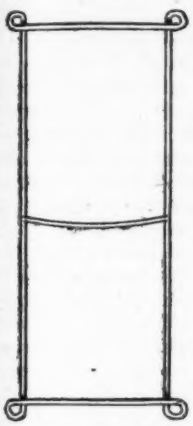


FIG. 1.—Wire frame showing curved cross-bar used when necessary to strengthen sides.

Many surgeons have advocated and used the "figure of 8" silkworm-gut suture for the same purpose. The small deeper loop of the "8" takes in its bight the essential layer—that is, the fascia of the linea alba or other fascial layer concerned—while the larger superficial loop is joined over the skin and encloses all the tissues superficial to the fascia.

This suture has many disadvantages; three may be mentioned: (1) The smaller deeper loop can only be made effective by tying the suture so tightly as to strangle the bulky tissues in the bight of the superficial loop. For this reason the suture could not be employed for, let us say, a vertical incision in the posterior sheath of the rectus. (2) The hold of the deeper loop on the fascia, wherever situated, rapidly becomes slack owing to the yielding of the tissues enclosed in the large superficial loop. (3) In case of suppuration of the abdominal wall—if the superficial loop is released for drainage purposes the fascial support is sacrificed as well.

These disadvantages can be obviated by tying the ends of the "figure of 8" suture over an oblong wire frame resting on the abdominal wall (Fig. 1). The tension of the

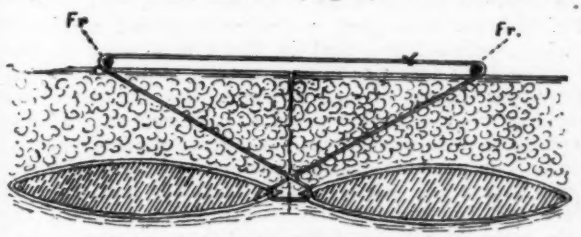


FIG. 2.—Fr.=Cross section of frame.

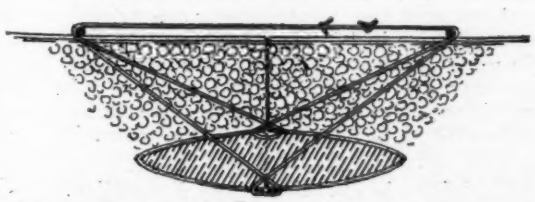


FIG. 3.—The frame is shown in cross section. For convenience the suture in the anterior and that in the posterior sheath are shown in the same horizontal plane.

suture so tied is approximately constant during the two or three weeks it remains *in situ* (Fig. 2). It can be employed for the posterior sheath of the rectus without damage to the muscle fibres (Fig. 3). In case of suppuration free drainage can usually be achieved by removal of superficial sutures without disturbing the fascial supports which are attached to the frame. The frame, far from being a discomfort, acts as a splint supporting the abdominal wall in coughing, vomiting, or distension.

For the larger wounds I have found a frame 7 in. by 3 in. made of No. 10 iron wire suitable in size and strength. For smaller wounds 6 in. by 2½ in. in slightly finer wire suffices. (The frames are obtainable from White and Wright, Liverpool.)

For transverse wounds the frame can be moulded by the hand to suit the curve of the abdominal wall. If likely to cause discomfort by pressure on the pubis or rib margin a corner, or the whole end, can be bent away from the bone. The loops at the corners of the frame prevent the terminal sutures slipping off. It may be an advantage in some cases to tie each suture end to its corresponding side of the frame without crossing over the surface.

FIG. 4.

I have sometimes used a modified "figure of 8" suture (Fig. 4) which gives a more secure apposition of the fascia. If this modification is used the silkworm-gut should be severed one or two days before it is actually removed.

I do not know whether the method here described is new; it is certainly helpful, whether ancillary to buried catgut in clean cases or without catgut when the wound has been exposed to contamination.

REFERENCE

[1] Goff: *Surgery, Gynecology and Obstetrics*, December, 1925.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

NEPHRITIS FOLLOWING INFLUENZA.

NOTES ON 100 CONSECUTIVE CASES OF INFLUENZA.

IN December, 1926,[1] I reported four cases of acute haemorrhagic nephritis following attacks of influenza, and when the epidemic was at its height, in January, 1927, I examined the urine in 100 consecutive cases as they occurred in practice. They included 10 children up to 14 years of age (Class I in the table); 76 insured patients, mostly tobacco workers (Class II); and 14 patients over 60 years of age (Class III), some working, some at home.

Influenza does not differ from any other acute infection—for example, pneumonia—in its effect on the glomeruli of the kidney; and when the fever is at its height the urine, as a rule, shows a slight haze of albumin, which, however, disappears with the fall of temperature. Four cases in the series, however, were very different.

CASE I.

A man, aged 22, had a severe influenzal cold with sore throat on January 16th (temperature 103.4° F.). On January 17th epistaxis occurred, and on January 18th severe haematuria. He was obviously very ill, restless, temperature 104° F., pallid, and swollen round the ankles and eyes. Albumin was present in the urine in excess, and the deposit showed red blood corpuscles, leucocytes, cell and blood casts, but no pus. He recovered rapidly from the kidney condition, but on January 27th he began to cough up thick jelly-like haemorrhagic sputum and complained of pain in the right chest. This sputum continued until January 30th. Since then he has made uninterrupted recovery and resumed work on March 28th. His previous health had been excellent, there had been no suggestion of a cardiac lesion, and I have no doubt the trouble in the chest was embolic.

CASE II.

A girl, aged 12, developed a severe influenzal attack with tonsillitis on January 6th; this was followed by tenderness over the liver region. Severe vomiting with marked jaundice occurred on January 7th, the urine showing much bile and some albumin. The attack subsided on January 10th, and I was astonished, on examining the urine that day, to find a condition resembling that of Case i—that is, as regards the deposit. This child had a history of rheumatism, and there was well marked mitral disease. She made an excellent recovery.

CASE III.

The mother, aged 48, of Case ii contracted influenza a week after (January 13th). She did not complain of tonsillitis, but almost at once developed haematuria. The deposit was similar to, but not so abundant as in Case ii, but the albuminuria was more persistent and only cleared up finally on March 22nd.

[1] BRITISH MEDICAL JOURNAL, December 11th, 1926, p. 1118.

CASE IV.

A man, aged 26, a tobacco worker, whose previous health had been good, on January 15th developed influenza with severe tonsillitis. His urine showed much albumin, and, microscopically, a few red blood corpuscles. This case has been most persistent. He still complains of weakness, breathlessness on exertion, and is unfit for work. The albuminuria has not cleared up.

One Hundred Cases of Influenza, showing Proportion affected with Nephritis.

	Cases.	Nephritis present.
Class I	10	1
Class II	76	3
Class III	14	0

The bacteriological examination of the urine of the four cases of nephritis mentioned showed streptococci and *Bacillus coli* to be present.

As to the pathology of the nephritis following influenza, I do not think that any doubt can exist that in Case i renal embolism occurred, followed later by pulmonary infarction in the right lung. The other cases described can be explained in a similar way, as Dr. Ambrose W. Owen[2] mentions. Wyllie and Moncrieff[3] think that this haemorrhagic nephritis follows acute tonsillitis in children, but adults are as often affected, in my experience, and sore throat is not necessarily present (Case iii). They, however, agree that the condition is probably caused by renal embolism.

Conclusions.

Influenza causes, like most acute infections, a febrile albuminuria, due to glomerular changes in the kidney. There are cases, however, in which the nephritis is well marked (4 per cent. in my series), either (*a*) haemorrhagic, as in Cases i, ii, and iii, or (*b*) exudative, as in Case iv. Embolism in the renal vessels is the probable cause of this nephritis.

The prognosis is excellent as a rule. I have seen seven cases—four in children, three in adults—of haemorrhagic nephritis following influenza since December, 1926, and all have now recovered fully; but persistent albuminuria may occur (as in Case iv) and cause prolonged incapacity.

Southville, Bristol. ARCHIBALD S. COOK, M.B.

GRAMOPHONE NEEDLES IN RESISTANT SINUSES.

THE following case seems noteworthy as showing how far a patient may go in her efforts to prevent recovery and to prolong treatment in hospital.

A woman, aged 32, with a history of tuberculous disease of the left knee and ankle since 1924, had been in a sanatorium for sixteen months with swelling and pain around the joints, and later, discharging sinuses. The knee improved, but early in 1926 she was admitted to hospital on account of the ankle; *x*-ray examination did not show evidence of bone disease and good progress was made under treatment. In a few months she was transferred to a sanatorium where discharging sores again formed over the knee, causing her to be readmitted to hospital. The lesions were small ulcers rather than sinuses, and the bone was not involved; some suspicions were aroused at first and the leg was encased in plaster for a while, to prevent possible interference. The plaster had to be removed within a fortnight owing to the patient persistently complaining of severe pain; but there was not much alteration in the condition of the knee. As time went on the lesions increased in number and were absolutely resistant to treatment. It was thought that they might be lupoid in character. Another focus appeared in the right breast, where a lump formed and broke down; this healed slowly, but the condition of the knee got gradually worse, small abscesses forming periodically. During the whole time the temperature in the evening was slightly raised, with exacerbations, and the pulse rate was slowly increasing.

Subsequent *x*-ray examination showed seven short pieces of needle, resembling short gramophone needles, implanted in the superficial tissues round the patella, all but one perpendicular to the surface. Four of them were close together distal to the patella on the inner aspect, and three level with the patella on the outer aspect. A fragment of needle was also observed in the right breast. The patient denied all knowledge of the needles.

I am indebted to Mr. Wilfred Gostling and Dr. Newbery Fergusson of the honorary staff for permission to publish the case.

The County Hospital, York. ROBERT E. HADDEN, M.B.

[2] Ibid., April 2nd, 1927, p. 645.
[3] *Lancet*, 1926, vol. i, p. 128.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

HAMPSTEAD DIVISION.

A MEETING of the Hampstead Division was held at the Central Library, Finchley Road, on May 12th. In the absence of the chairman of the Division, Dr. J. S. Mackintosh, the chair was taken by the vice-chairman, Dr. ARTHUR REES.

Immunity to Diphtheria and Scarlet Fever.

Dr. R. A. O'BRIEN opened a discussion on immunity to diphtheria and scarlet fever by means of toxin-antitoxin treatment. In the course of his address, Dr. O'Brien gave a short description of the Schick test and experiences therewith. His conviction of the scientific truth and practical utility of the test and active immunization when properly used and controlled grew more firm each year. He and his colleagues had had under observation since they began this work several institutions in which the use of these measures had enabled the authorities either to abolish diphtheria altogether or, if prophylactic measures had not been previously used, to deal with epidemics with a degree of ease and confidence that was deeply appreciated by those responsible for administrative measures. In institutions where cases were continually occurring, it was important to swab the Schick-negative reactors, for among them would be found the dangerous "profuse" carrier of virulent diphtheria bacilli, if a "carrier" were really the cause of the epidemics. Attempts were constantly being made to simplify the procedures; prophylactic injections were now given to all children available before school age without a preliminary Schick test. The aim of their work was to increase the efficiency of immunization, and to reduce the number of injections. Toxoid, which was of higher efficiency in all laboratory tests, had not been sufficiently tried clinically in England. Mr. A. T. Glenny had now in the press a paper describing the use of the floccules produced by the mixing of *toxoid* and antitoxin following the Ramon toxin-antitoxin technique. It was hoped that this preparation would not produce reactions in adults, and that it might possibly reduce the number of injections necessary to promote immunity. Mr. Glenny had also succeeded in recovering a much purified toxoid, probably entirely free of antitoxin, and this substance had proved to be a potent prophylactic in animal tests.

Dr. O'Brien then gave a short description of the Dick test, and pointed out that in the typical case of scarlet fever the Dick test was almost always positive in the first twenty-four hours of the disease; the Schultz-Charlton blanching of the rash was also positive, and numerous streptococci were present in the culture made from throat smear. The patients during convalescence became negative to the Dick test. Already some hospitals had, by testing nurses and immunizing the Dick-positive reactors, apparently reduced scarlet fever to the vanishing point in hospital personnel. These data were of great importance to the clinician and the administrator. Scarlet fever antitoxin was effective in "toxic" but probably useless in late septic cases. Patients treated with antitoxin did not develop their own immunity, and so were more apt to remain Dick-positive and presumably non-immune to the disease than those not treated with antitoxin.

Diphtheria Prevalence and Prevention.

Dr. GRAHAM FORBES, who followed, read a paper on diphtheria prevalence and its prevention in Hampstead. After describing the high incidence of diphtheria of recent years in London, particularly among those under the age of 15, who contributed 76,200 (82.5 per cent. of the total cases), and 5,340 deaths (97 per cent. of the total diphtheria mortality), during the seven years 1920-26, he compared its prevalence in Hampstead with that in other metropolitan boroughs. Although the average annual diphtheria attack rate for the past ten years in Hampstead stood at

1.8 per 1,000, or twenty-third in order of attack rate among the twenty-nine metropolitan boroughs, as against 2.65, the mean for all London, the incidence had been by no means uniform. In 1921, a year of greater severity than any since the disease was made notifiable, no fewer than 408 cases were notified in the borough, representing an attack rate of 5.1 per 1,000, and in that year Hampstead stood fourth in order of attack rate among the twenty-nine boroughs. That high prevalence was mainly located in the Kilburn, West End, and Belsize wards, in streets whose population density and overcrowding rate were higher than in any other part of the borough—notably, Netherwood Street and Palmerston Road (enclosing Netherwood Street School), in Kilburn ward; Ravenshaw and Broomsleigh Streets, close to Broomsleigh Street School, in West End ward; and, in Belsize ward, Fleet Road and School provided the majority of the cases. It was noteworthy that the street distribution of diphtheria radiated from the vicinity of the schools, as from separate centres, infection becoming less heavy the further removed from a school. As regards incidence among the child population, whether taken for the 0-15 year period, or actual school population rate, Hampstead presented a much higher figure than the average for all London for the two groups in that particular year (1921). Whereas the ten years' mean rate for Hampstead among those under the age of 15 was 7.4 per 1,000, as compared with 8.2, the all-London mean, in 1921 the figure reached 20.8 (0-15 years) and 28.8 (school age rate) per 1,000, whilst the mean for all London was only 11.3 and 9.3 per 1,000 of the two populations.

Special reference was made to the relationship between population density, overcrowding, and diphtheria incidence, illustrated by maps, charts, and tables thrown on the screen, comparing these factors in the individual wards, in Hampstead as a whole, and in the other metropolitan boroughs. The London boroughs could be divided into five groups, A, B, C, D, and E, showing an ascending scale of density, overcrowding, and diphtheria incidence. The very unequal distribution of diphtheria in the several wards rendered it possible to place each ward in one or other group. The less affected wards—Town, Central, Adelaide, and Priory—with an average population density of 46.6 persons per acre and a ten-year diphtheria attack rate of 1.06 per 1,000, fell into Group B; Belsize and West End wards, with average density of 80 per acre and attack rate per 1,000 of 2.5, into Group C; and Kilburn ward stood alone out of the seven wards in Group E with an average population density of 162.5 persons per acre and an attack rate of 2.75 per 1,000. In that ward was an area of 10 acres formed by four densely populated streets, enclosing Netherwood Street School, and showing a population density as high as 238 persons per acre. Dr. F. E. Scrase, the medical officer of health, had stated, in his annual report for 1921, that the severe diphtheria outbreak in that year, when 128 cases were notified in the Kilburn ward alone, was of unusual virulence, and attended by an unusually high case mortality. At one time 50 per cent. of the cases died—evidence presumably of association between population density, overcrowding, and diphtheria incidence influencing the spread of massive doses of infection, whereas in West End ward, although the actual number of cases notified (137) was higher, they were of less severe type, and the mortality was much lower. In the thirteen elementary schools in Hampstead the number of cases of diphtheria in the last ten years, among a yearly average of 6,460 children on the school rolls, totalled 556, of which 186 had occurred in 1921. The schools most affected were "Broomsleigh Street" in West End, with 144 cases in the ten years (average attack rate 16.5 per 1,000), 59 cases in 1921 (attack rate 58); "Netherwood Street" in Kilburn ward, 119 cases in ten years (attack rate 9.7 per 1,000), in 1921 64 cases (attack rate 74 per 1,000); in Belsize ward, Fleet Road School, 108 cases in ten years (average annual attack rate 10 per 1,000), in 1921 16 cases (that is, attack rate of 15 per 1,000).

Dr. Forbes drew attention to the risk of a recurrence of the high wave of infection of 1921, and pointed out that the past two years had shown a rising incidence in the borough. It was significant that the *average* number of cases per ward for 1926 was 23, the same as in 1920, immediately preceding the outbreak of 1921. The necessity for guarding against that risk was obvious. The time was opportune for the introduction of preventive measures afforded by the use of the Schick test and diphtheria immunization, which had been fully explained by Dr. O'Brien. In ten years diphtheria had, Dr. Forbes estimated, cost Hampstead about £50,000—that is, about £5,000 per annum. The cost of testing and immunizing all the school children in the borough would amount to about £1,000. For the expense incurred by a single case of diphtheria (about £30), 200 children could be tested and immunized. The position of diphtheria immunization in the United States (especially New York City) and in Great Britain was compared and reviewed, and details were given of the success of preventive measures which had already been carried out among the staffs of fever hospitals, in residential institutions, and among school populations in New York, Edinburgh, Aberdeen, and Birmingham.

Dr. Forbes concluded by suggesting the formation of a borough committee, including appointed representatives of the local medical practitioners, public health and education authorities, child-welfare workers, and health visitors, under the chairmanship of the medical officer of health, to decide on the best means of setting on foot the adoption of diphtheria immunization, and he appealed to the meeting to initiate such a movement.

In the subsequent discussion, Dr. S. MONCKTON COPEMAN, F.R.S., referred to the successful use which had been made of diphtheria immunization in dealing with the outbreak at the Soldiers' Daughters' Home in Hampstead in 1922. Dr. F. E. SCRASE, medical officer of health to the borough of Hampstead, stated as his firm conviction that diphtheria immunization as a preventive measure was bound to come, and that the medical profession as a whole should be prepared to advise it to their patients and to help in its adoption.

OXFORD DIVISION.

THE fourth meeting of the year of the Oxford Division was held in the Radcliffe Infirmary on May 25th. Dr. WILLIAM COLLIER, sen., was in the chair, and forty members were present.

Treatment of Laryngeal Conditions.

Mr. V. E. NEGUS gave an address on some common affections of the larynx and their treatment, illustrating his remarks with diagrams. He said that metallic foreign bodies in the larynx should always be removed by direct vision. Vegetable foreign bodies set up acute tracheitis and bronchitis, and tracheotomy had first to be performed before their removal. Inflammation of the larynx of an acute type was part of a general acute catarrh of the upper air passages, with a symmetrical distribution, eliminating any difficulty in diagnosis. Doubt might arise in cases of chronic laryngitis associated with infection of the upper air passages, in mouth breathers, and in patients with septic tonsils, teeth, or sinuses. In these cases it was necessary to exclude tuberculosis and syphilis; a cure resulted from removal of the cause. In regard to specific infections, the treatment of the laryngitis resolved itself mainly into treatment of the general disease. Syphilis of the larynx, in the experience of the lecturer, was a rare disease. Tuberculosis of the larynx, while it might take the form of a secondary lupoid invasion from a focus elsewhere, or be part of an acute miliary process, was generally secondary to pulmonary disease. The onset was painless, and it was only when the condition was advanced that pain became a prominent symptom. The presence of pain had a great bearing on the prognosis. In the early stage the prognosis was good as long as the general condition was satisfactory. Complete silence was essential to successful treatment, and in men it was also necessary to advise against strong muscular effect, such as the forcible use of the arms, when it was known that the cords came together sharply. In the more advanced stage, when the

disease had spread outwards, the prognosis was much worse. For the pain on swallowing orthoform was the best remedy. Among new growths Mr. Negus mentioned papillomata, which, beginning in children aged about 10, tended to disappear. Following a low tracheotomy the warty growths should be picked off from time to time. Malignant growths were usually squamous-celled epitheliomata occurring nearly always in men over 60, involving as a rule the anterior extremity of one vocal cord, and causing a certain amount of hoarseness, without pain or loss of weight. If diagnosed early the condition could nearly always be treated successfully by operation. The different operations for various stages in new growth formation were shortly reviewed. Mr. Negus also briefly discussed various functional affections of the larynx and their causation.

Clinical Cases.

Dr. W. WOOD showed three cases of disorder of the central nervous system.

1. A man, aged 40, suffering from tabes dorsalis. The affection had spread to the anterior horn cells, with resulting wasting of the small muscles of the hands, as in progressive muscular atrophy.

2. A man, aged 32, with the Parkinsonian syndrome following encephalitis lethargica. In this case there had been an interval of over two years of apparent good health.

3. A man, aged 40, with well marked signs of disseminated sclerosis. This patient had been in the hospital twenty years previously with paraplegia and incontinence of urine, from which he recovered, and it was not till sixteen years later that difficulty in walking recurred.

Mr. HUGH WHITELOCKE showed a case of osteo-arthritis of the right hip in a man aged 56. He had a history of hemiplegia and an enlarged right testis of four years' duration. The reflexes were all brisk and the Wassermann reaction was negative. He had been sent to hospital with a diagnosis of femoral aneurysm. Two recent cases with similar hard swellings in Scarpa's triangle, and a similar provisional diagnosis, had proved to be (1) Charcot's disease of the hip; (2) diaphyseal aclasia affecting the femur.

Mr. W. W. WAGSTAFFE showed two cases.

The first was a case of diverticulitis in a man, aged 38, who was admitted with five days' history of abdominal pain and vomiting. The temperature was 100°, and the abdomen was resistant all over; there was no dullness and the bowels were regular. The condition appeared to be very obscure, and the patient was watched for more than three weeks, during which time he did not alter appreciably, except that tenderness became more marked and it was thought that a mass could be felt under the right rectus. Laparotomy showed that the mass was an inflammatory condition on the mesial border of the ascending colon. There were also diffuse adhesions in the neighbourhood of the liver and round the gall bladder. The appendix was normal. In view of the absence of any obstructive symptoms and of the man's weakened condition it was not considered advisable to try any short-circuiting operation or to attempt the excision of the tumour. Accordingly a rubber glove drain was put down to the mass and the abdomen was closed. The condition gradually subsided and one month later the man was practically convalescent.

The second patient was a man, aged 53, who was shown at a meeting of the Association on May 27th, 1925, as a case of typhlitis (JOURNAL, June 20th, 1925, p. 1127). At that time a laparotomy was performed for a twenty-four hours' history of acute pain in the right iliac fossa and vomiting. The appendix was found to be not affected, but the caecum was acutely inflamed. Subsequent to the operation, which merely consisted in making a rubber glove drain down to the inflamed caecum and removing a practically normal appendix, there was a considerable amount of distension and constipation, but this rapidly settled down and the patient went home after about a fortnight. He remained well and at work, with the exception of intercurrent illnesses not connected with this illness, until two days before admission on May 17th, 1927. He was then found to be suffering from acute abdominal symptoms suggesting obstruction, with marked visible peristalsis. Under treatment the symptoms subsided and the patient was due to leave the hospital. The condition, no doubt, was a flare-up of the old typhlitis accompanied by tenderness and pain over the mass in the caecum, in exactly the same way as previously. The patient was reported to have cavities in both lungs, a tuberculous ulcer of the tongue, and a positive Sigma reaction. In view of these conditions it was not proposed to perform any further operation for the relief of the typhlitis unless it became absolutely necessary.

Reports of Societies.

CAUSES OF THE ONSET OF LABOUR.

AT a meeting of the Royal Society of Medicine, Section of Obstetrics and Gynaecology, held on June 17th, with Dr. A. DONALD of Manchester in the chair, Dr. R. A. GIBBONS read a paper on "The causes of the onset of labour."

Dr. Gibbons stated that this subject had interested those who had devoted themselves to the study of obstetrics from the very earliest times. Hippocrates, more than two thousand years ago, considered that when the foetus was mature, hunger drove it to press its feet against the fundus uteri, thus gradually distending the os. This theory has held even down to Freidrich (1831), although Galen did know of the contractions of the uterus and their effect on the os uteri. The theories as to the cause of the onset of labour were so numerous that only the following would be considered.

Brown-Séquard (1858), supported later by Leopold, first advocated the theory that the loading of the blood with carbon dioxide gas would lead to uterine contractions. Although this has been supported to a greater or less extent by other workers, it was not until 1925 that Blumereich apparently definitely disproved this supposition. Naegeli believed that at the end of pregnancy there was degeneration of the amniotic membrane, which, becoming detached, acted as a foreign body in the uterine cavity. Others, such as Leopold, found that detachment of the amniotic membrane began as early as the fifth month of pregnancy. Similarly the placenta, when the seat of multiple infarcts, might act in a like manner in the production of uterine contractions. By some workers the biochemical relations of the mother and child have been considered as factors in the cause of the onset of labour, but the evidence was too conflicting to be of any value. The influence of the nervous system on the contraction of the uterine musculature was next to be considered. Although it had been believed at one time and another that nerve centres for the uterus might exist either in the medulla or the lumbar portion of the spinal cord, the experiments of Kruieger and Offergeld demonstrated that when the uterus was cut off from all connexion with the central nervous system labour set in at the usual time and progressed normally. Furthermore, Routh, among others, had shown that after destructive injuries to the lower part of the spinal cord labour might progress normally, although unaided by voluntary efforts. There was, however, ample evidence to show that the uterine muscle was abundantly supplied with nerves, being in intimate connexion with the sympathetic nervous system. An immense amount of work had been done as regards the composition of the maternal blood in pregnancy, and it was considered that there were no known changes in this blood which might account for the onset of labour.

Changes in the endocrine glands had been studied in animals during pregnancy, and it might be assumed that similar changes took place in the glands of the pregnant woman. The ovary had two endocrine secretions, one produced by the ovarian tissue and one which was the product of the corpus luteum. It was probable that in pregnancy the corpus luteum so dominated the ovarian metabolism as to inhibit the normal ovarian secretion. But towards the close of pregnancy, with the involution of the corpus luteum, there was again action by the true ovarian secretion. Recent work by Dixon and Marshall suggested that the ovarian secretion activated the pituitary gland, which in its turn produced uterine contractions, therefore having an important bearing on the onset of labour. The pituitary gland was believed by some to be an important factor in the termination of pregnancy, but up to the present time definite proof of this fact was lacking. Cybulsky had demonstrated that the suprarenal gland, through the action of its secretion on the sympathetic nervous system, maintained in a state of tonus the muscular tissues of the body. It would not, therefore, be unreasonable to associate hyperactivity of this gland with the onset of labour. Various workers had allocated internal secretions to the

uterus and placenta, but their work was not generally accepted. It was well known that labour frequently followed a very slight emotional disturbance. This was of interest when it was remembered that the emotional state could produce activity in the suprarenal glands, the possible relation of adrenaline to the termination of pregnancy having been already mentioned above. It was very difficult to produce conclusive evidence that the foetus might be the source of the material circulating in the maternal blood concerned with the onset of labour. The fact that inefficient attempts at labour took place at the fortieth week in an extrauterine pregnancy, when the foetus reached full term, must be regarded as an argument in favour of this. Moreover, experiments by Stirling and Lane-Claypon had demonstrated hypertrophy in the mammary glands of non-pregnant rabbits following the injection of foetal extracts. Finally it was quite evident, whatever might be the cause of the onset of labour, this cause must be due to some material circulating in the maternal blood, which either accumulated throughout the pregnancy or was suddenly poured into the blood stream. In concluding, Dr. Gibbons wished to remark that he had brought his paper before the society to demonstrate how profound was our ignorance of the causation of a process taking place somewhere or other every minute.

Reviews.

DIAGNOSIS IN HEART DISEASE.

SINCE the issue of the first edition of Dr. PRICE'S *Diseases of the Heart*[1] eight years ago, a considerable number of new observations relating to cardio-vascular disease have been published; of these the author has incorporated a judicious selection in his second volume. Amongst others, the new matter includes articles on anaesthesia and cardio-vascular affections, *x*-ray examination of the heart and aorta, quinidine therapy in auricular fibrillation, and on the surgical treatment of mitral stenosis and angina pectoris. The book is intended for the general practitioner, and the clinical point of view is kept steadily in mind throughout. Thus, though the electro-cardiograph is the most precise means available for the analysis of cardiac irregularities, Dr. Price describes these chiefly in terms of palpation, auscultation, and of venous and arterial tracings, electro-cardiography being dealt with apart in a well illustrated chapter. While it is true that the type of irregularity can in most instances be determined without reference to the electro-cardiogram, yet, for a proper understanding of the subject, it is questionable if the separation is entirely to the reader's advantage. Again, greater emphasis might have been laid on the use of the hands, eyes, and ears in the differential diagnosis of the irregularities; for example, little is said of the exercise test in this connexion. In dealing with the myocardium and the effects of valvular disease on the heart, the author's views are perhaps more orthodox than modern; thus the sequential dilatation and hypertrophy of the various chambers is described in the usual manner, and fatty infiltration and degeneration still hold their place. As a whole, however, the book is good, and Dr. Price has accomplished his avowed object of presenting concisely information of service in the diagnosis, prognosis, and treatment of diseases of the heart by modern methods.

THE BLOOD PLATELETS.

THE book on the physiology and pathology of the blood platelets,[2] by Dr. J. ROSKAM, is a modest but comprehensive review of a field which has long called for the attention of the critic. Its literature is scattered widely through physiology, biology, pathology, and immunology, and it can have been no easy task to assemble and discipline this material. The author wields a somewhat destructive pen, but contrives to save from the wreck enough to form a solid foundation upon which to build a reasoned experimental attack upon the problem.

The scope of the discussion is best indicated by a summary of the conclusions to which Dr. Roskam comes. Having decided that the proof of the "vitality" of the platelets is good, he finds that there is, at present, no strong evidence that they play any fundamental or essential part in the symptoms of anaphylactic shock or haemorrhagic purpura, in blood-clotting or the contraction of the clot, or in immunity phenomena. On the other hand, important morphological changes accompany clotting, and the platelets do undoubtedly accelerate clotting and the contraction of the clot, and do disappear from the blood stream during shock. This is held to be due to agglutination and entrainment in certain capillary areas. They will agglutinate bacteria as a result of surface phenomena analogous to the early stages of phagocytosis. Finally, extracts of platelets exhibit confusing effects upon blood pressure, which suggest that simultaneous vaso-dilatation of the arteries and constriction of the capillaries are involved.

All those who have become interested in these much disputed elements of the blood will welcome this review of the work and conclusions of the French school.

RADIOLOGY.

IN *X-Rays Past and Present*[3] Mr. V. E. PULLIN and Mr. W. J. WILTSHIRE of the research department, Woolwich, give a clear and well written account of the history, theory, nature, and practical uses of *x* rays. It is well balanced, and forms a useful introduction to the study of radiology. In the historical account of the application of *x* rays to medicine it makes clear the rapidity with which results of practical value were obtained. No attempt is made to deal exhaustively with diagnosis, and, very properly, little is said about treatment. In fact, the scientific aspects of radiology are the object of the work, and the medical details mentioned rather illustrate this than appear for their own sake. The importance of adequate protection is rightly insisted upon, as the commercial applications of *x* rays are extremely wide, and their use in industry will demand installations of special design, which will be handled by those who are neither experts nor medical men. The many and varied uses of *x* rays in industry—"from golf balls to aeroplanes, from chocolates to big guns, from the fitting of shoes to the detection of 'faked' oil paintings"—are well illustrated by skiagrams of flaws in casting, the presence of bullets in cartridges supposed to be blank, and the internal structure of German shells and ammunition. The concluding chapter brings out with light touches the responsibility of the solid British business man, whose inherent conservatism renders it a difficult task to get *x* rays used to the full advantage of industry.

Roentgen Interpretation: A Manual for Students and Practitioners,[4] by GEORGE W. HOLMES, assistant professor of roentgenology in the Harvard Medical School, and HOWARD E. RUGGLES, professor of roentgenology in the Medical School of the University of California, which is now in its third edition, is a guide to *x*-ray diagnosis and, being liberally illustrated by skiagrams, admirably fulfils its object. The authors wisely insist on a knowledge of pathology and on the importance of taking every available opportunity of correlating the skiagraphic appearances with the anatomical conditions, and, in the first chapter, deal with appearances which may erroneously be regarded to indicate disease. The consideration of bony and skeletal conditions, including the skull, occupies about half the work; of the gastro-intestinal tract and the chest each about one-sixth; and of the genito-urinary organs about a twelfth. Some of the skiagrams, such as that of a haemophilic elbow-joint with organizing blood-clot in the capsule, and of a patent ductus arteriosus, as indicated by the prominence of the curve of the pulmonary artery, are specially interesting. There are also skiagrams illustrating

[1] *Diseases of the Heart.* By Frederick W. Price, M.D., F.R.S.Ed. Second edition. Oxford Medical Publications. London: Milford, Oxford University Press. 1927. (Demy 8vo, pp. xvi + 534; 249 figures. 21s. net.)

[2] *Physiologie Normale et Pathologique du Globulin* (Plaquette de Bizzozero). Par Jacques Roskam. Les Problèmes Biologiques, VI. Paris: Les Presses Universitaires de France. 1927. (6 × 9¼, pp. 151; 21 figures. 25 fr.)

[3] *X-Rays Past and Present.* By V. E. Pullin and W. J. Wiltshire. London: Ernest Benn, Ltd. 1927. (Demy 8vo, pp. 229; 43 figures. 12s. 6d. net.)

[4] *Roentgen Interpretation: A Manual for Students and Practitioners.* By George W. Holmes, M.D., and Howard E. Ruggles, M.D. Third edition, revised. London: Henry Kimpton. 1926. (Med. 8vo, pp. vii + 336; 226 figures. 21s. net.)

the use of lipiodol in bronchiectasis, but there are not any in connexion with the diagnosis of tumours of the spinal cord. Pyelography, and Evarts Graham's method of visualizing the gall bladder with tetraiodophenolphthalein, are clearly but briefly described, and it is pointed out that these procedures are not entirely devoid of danger to the patient. The last chapter deals with fluoroscopic technique, and its final paragraph points out that the possession of a fluoroscope does not make a roentgenologist, and that the subject cannot be mastered in a few weeks.

PUBLIC HEALTH IN CANADA.

THE progress of public health in Canada, and especially in the province of Ontario, is reflected in the second edition of Professor FITZGERALD'S *Introduction to Preventive Medicine*,[5] which at an interval of some five years follows the first, published in 1922 and reviewed in the JOURNAL of August 4th, 1923. The section on scarlet fever now contains an account of the test introduced by G. F. and G. H. Dick, and of the immunization and antitoxic therapy identified with their names. The section on tuberculosis has been amplified by a fuller discussion of incidence and modes of transmission. In his advice to the physician on the management of diphtheria the author recommends examination of the throat, repeated at least every twelve hours, pending the verdict of the bacteriologist. He adds, however, that "if there is reason to think that the case may be one of diphtheria, antitoxin should be given at once." Reference is made to the dramatic reduction in the prevalence of typhoid fever which, both in the United States and in Canada, has attended the purification of water supplies. The statement survives from the first edition that Defoe described the Black Death of 1348-49. It emerges that opposition to vaccination against smallpox is not unknown in Ontario. The author says that during the Toronto outbreak of 2,867 cases "a few misinformed and misguided individuals increased the difficulties of the situation by carrying on the usual vituperative and untruthful campaign against vaccination." One method of vaccination only is recommended, that of the linear incision, but the drill and the acupuncture methods are mentioned. The official English plan of scarification, with its prescribed areas of vesiculation, is passed over in silence.

The total bacterial count for certified milk is, in Ontario, required to be lower than in this country, but no standard for *B. coli* is laid down. A simplified arrangement of house pipes for drainage is current in North America. The schemes depicted in the book do not exhibit separate soil pipes and waste pipes. All sanitary fixtures, after trapping close up, join one common vertical stack, which passes direct to the drain. With regard to rural education in hygiene Lumsden is quoted as saying that "there was no optimism about teaching old farmers new hygienic tricks, but it was thought that the school children with instruction in hygiene might, upon becoming grown up, apply their hygienic knowledge."

The evolution of public health in England, the United States, and Canada is reviewed, the difficulties of smaller local authorities are recognized, and the relative values of the various activities of a public health department are appraised on a numerical basis. Professor Fitzgerald's book may be cordially recommended to the English reader. While necessarily dealing to some extent with the problems of a rapidly developing country, it treats the subject on broad lines, and never loses touch with the general principles by which sound public health policy must everywhere be guided.

APHORISMS.

THE Dean of St. Paul's, as our readers know, is a friend of medicine and science. *Wit and Wisdom of Dean Inge*[6] is a volume of selections made and arranged by Sir JAMES MARCHANT and prefaced by the Dean, who, in modestly criticizing his own writings, adds one more to the aphorisms to follow: "Originality, I fear, is too often only undetected and frequently unconscious plagiarism."

It is evidence of the broadmindedness of this fine classic and authority on Plotinus and on neo-Platonism that he considers science as an instrument of liberal education to have a far higher value than is usually conceded by humanists, and "the air which blows about scientific studies is like the air of a mountain top—thin, but pure and bracing." Wisdom he defines as "a just estimate of the relative value of things," the wisdom of the wise as "an uncommon degree of common sense," and the Utopian as "a poet who has gone astray." The letter of a schoolboy warned by a father, who fancied himself busy, not to be diffuse, is worth quoting for its terseness: "S.O.S., L.S.D., R.S.V.P."

As is well known to his readers, Dean INGE believes that any improvement in human nature is to be looked for in the infant science of eugenics.

NOTES ON BOOKS.

DR. J. FORD ANDERSON has published a little pamphlet of *Reminiscences of Lister*.[7] Dr. Ford Anderson first saw Lister in 1861, at an operation by Syme of Edinburgh on an aneurysm of the gluteal artery, but only got to know him well when he came to London in 1877. Dr. Anderson attributes to his Quaker upbringing Lister's seriousness in study and his spirit of love and desire to render good service to mankind. He found him a highly sensitive man, who exaggerated the opposition he met with from London surgeons. He had almost an obsession that his contemporaries were banded against him, though, in Dr. Anderson's opinion, almost every surgeon had accepted the principles by the time Lister came to London. Lister was a firm believer in the truth of his principles, and consequently fearless in operation. He was no self-seeker; and, in proof of his kindness, Dr. Anderson relates that, having a son at Winchester with an attack of diphtheria, and knowing that in those early days he could only get antitoxin at the Jenner Institute, which was closed, he hurried to Lister, the president of the institute, and told him of his difficulties. Lister came out on an inclement night in an open carriage, and obtained the antitoxin. It was only later that Dr. Anderson discovered that Lister had been confined to the house for three weeks with a bad catarrh.

Dr. L. BARD, in his book on the clinical forms of pulmonary tuberculosis,[8] recapitulates and discusses the system of classification that he first put forward in 1898. His main contention is that no classification of pulmonary tuberculosis is of any value unless it is dynamic. It is not enough to describe the localization of the lesion; it is essential to indicate its mode of development. Every type of tuberculosis, according to the author, evolves in its own way; hence if the type be correctly diagnosed the prognosis can be settled. In the classification he suggests pulmonary tuberculosis is divided into five groups—parenchymatous, interstitial, bronchial, post-pleuritic, and indeterminate—each of which is again subdivided. The parenchymatous group, for example, is divided into abortive and progressive forms; the progressive forms are again divided into caseous, fibro-caseous, and fibrous forms; and each of these is again subdivided into from three to eight classes. The classification rests partly on a clinical, partly on an anatomical, and partly on a pathological basis. It is not surprising that the author, when considering the objections that have been raised to it on account of its complexity, admits that it presents difficulties not easy to master. The great merit of Turban's classification is that it can be used with tolerable accuracy; it is generally possible by clinical and radiographical methods to determine the extent of the lesion. But by no means, other than making a microscopical examination of the lungs, is it possible to say whether a patient should have been placed in the (*d*) caseo-fibrous or the (*e*) fibro-caseous division of the (2) fibro-caseous types of the (B) progressive forms of the (I) parenchymatous class of pulmonary tuberculosis.

There is really very little to say about Dr. PIERRE PRUVOST'S book on tuberculosis of the lungs and of the serous membranes.[9] It is unconventional, direct, discriminative, and quite sound. The author chats in turn about diagnosis, treatment, and

[5] *An Introduction to the Practice of Preventive Medicine.* By J. G. Fitzgerald, M.D., LL.D., assisted by Peter Gillespie, M.Sc., C.E., M.E.I.C., and H. M. Lancaster, B.A.Sc. Second edition. London: H. Kimpton. 1927. (Med. 8vo, pp. xx + 792; 150 figures. 35s. net.)

[6] *Wit and Wisdom of Dean Inge.* Selected and arranged by Sir James Marchant, K.B.E., LL.D. With a preface by William Ralph Inge, C.V.O., D.D., F.B.A., Dean of St. Paul's. London: Longmans, Green and Co., Ltd. 1927. (Cr. 8vo, pp. xii + 133. 3s. 6d. net.)

[7] *Reminiscences of Lister.* By J. Ford Anderson, M.D., M.R.C.P.Lond. Reprinted from the *National Medical Journal*, May, 1927.

[8] *Les formes cliniques de la Tuberculose pulmonaire.* Par L. Bard. Paris: N. Maloine. 1927. (Cr. 8vo, pp. 96. 10 fr.)

[9] *Tuberculose Pulmonaire: Tuberculose des Séreuses.* Par Dr. Pierre Pruvost. Paris: G. Doin. 1927. (Med. 16mo, pp. 445; 32 figures, 16 plates. 30 fr. sans majoration.)

prognosis, expressing his opinions with perfect confidence. He deals at length with artificial pneumothorax, and adds a few pages on the use of oleothorax. The section on tuberculosis of the serous membranes is limited chiefly to the pleura and peritoneum. We can truthfully recommend it to all who have charge of tuberculous patients.

Volume 51 of the *Transactions of the American Gynecological Society*[10] is edited by Dr. A. H. Curtis, and contains the address of the president, Dr. F. S. Newell, and numerous well illustrated papers dealing with gynaecological subjects. A general index of volumes 1 to 50, covering the years 1876 to 1925, has also been issued; it includes lists both of subjects and authors.

The empirical medicine of the palmist, if you are credulous, must be most satisfying; it is so simple. Mr. NOEL JAQUIN declares in his book *The Hand and Disease*[11] that when you have learnt the position of the mounts of Saturn and Apollo, observed the girdle of Venus, and wandered along the via lasciva, a little study of lines of fate, life, and mentality will enable you, not merely to state the disease from which the patient suffers, but to predict what awaits him in the future. Mr. Jaquin anxiously assures us that the names of ancient gods applied to knobs and lines must be regarded as mere labels, with no astrological significance. There seems, however, to be a significant appropriateness, since the girdle of Venus is usually present in those with marked sexual impulses, while the via lasciva is darkly indicated as suggestive of "some form of artificial stimulation of the nervous system being indulged in which can only lead to nervous exhaustion." According to this ingenuous author, the most interesting and important type of hand is the "cancerous"; unfortunately, it may easily be confused with the neurasthenic type! The lines are deep and thick, the finger-nails show a predisposition to rheumatism, and the lines on the outer edge of the hand indicate sluggishness of the bowel. Discretion in diagnosis is, however, so necessary that "unless you are *sure* remain silent." Emotional depression is sometimes caused by the "impingement" of a main nerve. A nerve that becomes impinged would seem to be like a water-pipe that is pinched—it cannot carry the normal supply of current. This, it is said, is usually due to displacement of a vertebra, and can be cured by eminent "spinologists." It appears, therefore, that palmistry and osteopathy dovetail into one another, and make a common appeal to the half-baked and the neurotic.

[10] *Transactions of the American Gynecological Society*, Vol. 51 for the year 1926. *General Index*, 1876-1925. St. Louis: The Mosby Company; Philadelphia: W. J. Dornan. 1926. (Roy. 8vo, pp. liii + 314; illustrated. Index, pp. 161.)

[11] *The Hand and Disease*. By Noel Jaquin. London: Cecil Palmer. 1926. (Cr. 8vo, pp. xi + 179; 30 figures. 5s. net.)

THE UNITED STATES ARMY MEDICAL REPORT.*

THE report of the Surgeon-General of the United States Army for 1926 refers to the fiscal year ending in June, 1926, but the main part of the report, dealing with the health statistics, is concerned with the twelve months of the year 1925. The mean strength of the United States Army for that year was 11,429 officers, and 111,467 white and 2,219 coloured troops; in addition to these there were 839 nurses, including reserve nurses on active duty and student nurses. The strength of the troops in stations of the United States was 98,343, in the Philippines 11,539, in Hawaii 14,164, in Panama 8,428, in China 934, and in Porto Rico 1,180, with a proportionate distribution of nurses. But in addition to these a large number of civilians, approximately 75,319, dependants of officers and men on the active and retired lists or employed in connexion with army services, came under the professional care and treatment of the army medical service.

The establishment of medical officers was 922, of dental officers 154, and of veterinary and medical administrative officers 125 and 71 respectively, all of whom are under the administration of the Army Medical Department. During the year under review, however, the medical corps had 61 officers below establishment, and only 73 per cent. were available for general duties, the remainder being employed in administrative work or as instructors and students in the various schools. In these circumstances the Surgeon-General emphasizes, as in the previous year when there was a similar deficiency in medical officers, the inadequacy of the medical personnel. The number of dental officers, although only four below establishment, was also considered inadequate for the extensive duties of dental prophylaxis and treatment which they are now called upon to perform. For the past twenty-five years the proportion of dentists has been 1 to every 1,000 troops. The Surgeon-General considers that the proportion should be doubled.

Medical Personnel.

The enlisted ranks of the medical services numbered 6,472 of an authorized establishment of 6,522. Other interesting statistics of medical personnel refer to the numbers enrolled in the reserve of officers of the medical, dental, veterinary, sanitary, and medical administrative corps. Reserve medical officers alone number 10,327; and the medical units, organized for mobilization in a national emergency, include 90 evacuation hospitals, 72 surgical hospitals, 24 hospital centres, 146 general hospitals, and 72 hospital trains. Many of these units will be obtained by taking over *en bloc* well established civil hospitals with their complete staffs. In addition to these there has been a great increase in the commissioned and enlisted medical personnel of the National Guard, the number of officers being 1,246 and of other ranks 9,853, as compared with 128 and 841 respectively in the previous year. They provide 16 service companies, 35 ambulance companies, 12 collecting companies, and 29 hospital companies. Another feature in this extensive reserve organization of medical services is what is called "procurement planning," or plans for industrial foresight in supplying materials for the medical department in an emergency. Valuable assistance in this respect has been rendered by several trade organizations and leading members of the industries concerned.

Incidence of Diseases.

The health of the army is stated never to have been better than in 1925, although the admissions for injuries had increased. Bronchitis and the respiratory group of diseases, as in the previous year, head the list of admissions with a rate of 177.77 per 1,000, the next highest rate being 52.55, for venereal diseases. Bronchitis alone accounted for 6,729 admissions, or more than double the number in the British Army. The admission rate for venereal diseases is the lowest on record, and a significant decline from rates, amounting to 100 and 200 per 1,000, in the years previous to the great war. Prophylactic measures are compulsory, and an officer or soldier who fails to use them is subject to trial by court martial. Prophylactic outfits are issued, and prophylactic treatment centres, with orderlies in attendance, are established in garrison stations. Further, there is a physical inspection monthly, and pay is stopped during days of inefficiency on account of venereal disease. As these diseases show by far the highest rates of constantly sick, the loss of pay must be considerable.

In view of the Federal Prohibition Law the extent to which alcoholism and drug addiction prevail is of interest. With the exception of the years 1918-19, when the admissions were insignificant, an admission rate for alcoholism in the neighbourhood of 8 per 1,000 shows little variation since 1916. Drug addiction, however, shows signs of declining. It is interesting to compare the admissions for alcoholism with those in the British Army. In 1925 the number for the United States Army was 1,084, practically the same as in 1924. In the British Army, of considerably greater strength, in the year 1925 it was *nil*. Malarial fevers have been the chief causes of admission in the British Army. In the United States Army they have been reduced to the low rate of 8.67 per 1,000 in 1925. Between 1902 and 1917 the admission rate for these diseases among white troops in the United States alone averaged 24.45 per 1,000, and in the years between the civil war and the Spanish-American war 271.50 per 1,000.

Mortality Figures.

The annual death rate from all causes, 3.77 per 1,000, was also the lowest recorded in the history of the United States Army. The death rate from diseases was only 1.94, the first time this rate has fallen below 2 per 1,000. The rate from injuries, on the other hand, has increased, and exceeded the deaths from disease. It was 1.99 per 1,000, as compared with 1.89 in 1924 and 1.90 in 1923. This rate has never previously been exceeded, except during years of battle casualties. Suicide heads the list of deaths from all causes, not only in 1925, but for several years past. Drowning comes next, then aeroplane accidents, followed by tuberculosis and automobile accidents. The prominent position of suicides in these statistics is noteworthy, as is also the fact that nervous disorders, although not occupying a high place in the admission rates, are the chief causes of invaliding.

These are only a few of many points of interest and valuable study in this voluminous and exhaustive report. It is amply provided with statistical charts, and concludes with tables of detailed statistics of admissions, deaths, invaliding, and inefficiency from individual diseases and injuries in the United States, in the several oversea commands, and among civilians and members of the nurse corps.

* *Annual Report of the Surgeon-General, United States Army, 1926.* Washington: Government Printing Office. 1926. (8vo, pp. xiii + 482; 171 tables in text, 9 appendix tables, and 52 figures.)

British Medical Journal.

SATURDAY, JUNE 25TH, 1927.

RADIUM IN UTERINE CANCER.

It is now five years since treatment by radium was introduced at University College Hospital, and in preparing his report for the year 1926 the registrar, Dr. A. E. B. Paul, has taken the opportunity of prefacing the account of the year's work with an analysis of the results of the previous five years' treatment. The report has special reference to carcinoma of the cervix uteri and menorrhagia.

Sixty-two cases of inoperable carcinoma of the cervix were treated, and 58 have been followed; of these only 6 are known to be alive, and 3 of them have recurrences. Those alive and well had treatment twenty-five, twenty-four, and twenty months before the date of the report; the duration since the first treatment of the three cases with recurrence is forty, seventeen, and sixteen months respectively. Fifty-two patients are dead, their average duration of life after treatment being fifteen months. In many of these cases the radium treatment rendered the patient more comfortable, especially as regards the lessening of the haemorrhage and the alleviation of pain. A cure in any sense was not to be expected with any degree of confidence, but the patients' lives were certainly made easier. In the last report it was stated that a new method had been employed in treating cases with infiltration of the broad ligaments—namely, implantation of radium needles after laparotomy. Three cases in which this procedure was adopted are recorded; two of the patients are alive and have no recurrence after twenty-one and sixteen months respectively; the third case is alive after fourteen months, but has extensive recurrence. Of the operable cases of carcinoma of the cervix, 7 out of 13 patients treated with radium are alive and have no recurrence after forty-three, forty, twenty-nine, twenty-four, twenty-two, twenty, and twelve months respectively; one patient is alive after forty-seven months, but has a recurrence. It would therefore appear that in operable cases, when for any reason operation is contraindicated, a fair number of cures for at least two years may be expected. Twenty-two cases of carcinoma of the cervix were treated with radium and also operated upon, a complete Wertheim's operation being performed in most; of these, 5 are alive and without recurrence after sixty-two, fifty-four, thirty, twenty-four, and twenty-one months respectively; 3 are alive after fifty-four, thirty-three, and eighteen months, but have recurrences. One of the above, it will be observed, is still free after five years. Of 18 cases of carcinoma of the body of the uterus treated with radium only or by radium and operation, 12 are dead, 3 are alive without recurrence, 1 is alive but has recurrence, 1 cannot be traced, and the other case was a four years' cure when last heard of.

With regard to non-malignant cases, the results of treatment by radium in menopausal haemorrhage are extremely good, only a few cases requiring a second dose. The usual dose given is 3,000 to 3,600 milligram hours of the salt, and the technique of plugging the cervical canal as well as the vagina is now the standard practice. The results of radium when used in cases of essential menorrhagia are stated to be also very encouraging, the dose used being about 1,000 milligram hours of the salt. Cases of fibromyoma of the uterus varied much as regards results, but out of 20 cases first treated over a year ago, 12 have shown good results as regards the cessation of haemorrhage, and 3 required further doses before this was attained.

With regard to the main part of the report, which deals with the work for the year 1926, the cases are conveniently classified, and each one is carefully and completely described. The report, sixty pages in length, shows evidences of great care in its preparation, and the registrar is to be congratulated on the completion of an excellent piece of work.

SEWAGE DISPOSAL.

No more profound change has occurred in the sanitary circumstances of this country than that from a conservancy to a water-borne system of excrement disposal. Its share in improving the health of the community may be difficult to disentangle from the many other factors which have also contributed, but no one can question the magnitude or the importance of this change upon the health, more especially of urbanized communities. Like all other improvements, however, it has brought its own tale of troubles, and the problems peculiar to the disposal of sewage have exercised the resources of the chemist, the engineer, the biologist, and the sanitarian for well over half a century. Progress in the solution of these problems has been slow, costly, and difficult; it has advanced in the teeth of ignorant prejudice and popular indifference, and the civic neglect in which they were reflected. But there has been progress in knowledge and in its application. Research has disclosed the manner of operation of the natural processes by which the desired ends were attained, and the enterprise of exemplary public authorities has furnished in a variety of forms the "plant" in which on a practical scale the natural purification of sewage has been developed.

The activated sludge process may be said to be the latest development of the prolonged attempts at sewage treatment which were the inevitable outcome of the widespread adoption of the water-borne, sewage-producing system. How far it has been successful and to what extent, by whom and with what results it has been adopted, may be read in Mr. Arthur Martin's recent book on this subject.[1] The process itself is essentially what may be described as a natural process. It is in the direct line of descent from the earliest, pre-human stages by which nature disposed of dead organic matter. When this has passed into solution or otherwise become physically incorporated with water, the changes such a liquid undergoes in its progress towards a pristine purity are identical throughout a wide variety of methods of disposal. The soil was always known as the great purifier. What the soil failed to accomplish the rivers completed, given time and opportunity. But with the advent of the industrial age these were lacking. Intensification of purifying processes became necessary as the soil sickened and the rivers became offensively polluted. The development of the biological sewage "filter" was merely an application, on an intensive scale, of the processes natural to soil purification of sewage. The humus, the essential agent in the oxidative changes known to be necessary in the process of purification, was cultivated on the coarser particles of the

[1] *The Activated Sludge Process.* By Arthur J. Martin, M.Inst.C.E., etc. London: Macdonald and Evans. 1927. (Roy. 8vo, pp. xiv + 415; 76 figures. 30s. net.)

biological "filter" under conditions in which the supply of atmospheric oxygen was greatly amplified. This has been the great advance in sewage purification in a multitude of applications during the last thirty years. But a growing recognition that the humus was the essential agent failed to suggest its utilization in the manner in which it operated in the rivers. Laborious attempts at oxidizing sewage directly by blowing air in a continuous stream of bubbles through the liquid led to the rediscovery, but not the recognition, of humus. Dr. Fowler, the originator of the method of treatment by "activated sludge," thus describes his earlier experiments: "In a series of preliminary experiments, samples of Manchester raw sewage, contained in bottles of 80 oz. capacity, were aerated until complete nitrification ensued, the aeration being effected by drawing air through the sewage by means of an ordinary filter pump. In the case of the first experiment, about five weeks' continuous aeration was required in order to obtain complete nitrification, as had been previously observed. At the end of this period the clear oxidized liquid was removed by decantation, and a further sample of raw sewage aerated in contact with the original deposited matter, until the sewage was again completely nitrified. This method of treatment was repeated a number of times with the retention in each case of the deposited solids. It was found that as the amount of the deposited matter increased, the time required for each succeeding oxidation gradually diminished until eventually it was possible completely to oxidize a fresh sample of crude sewage within twenty-four hours. For reference purposes, and failing a better term, the deposited solids resulting from the complete oxidation of sewage have been designated 'activated sludge.'"

Gradually the idea has dawned that this "activated sludge" is not sludge as ordinarily understood, but is a biological complex, a rich flora and fauna of micro-organisms mixed with organic matter in an advanced phase of dissolution. It rapidly sediments from the sewage with which it is mixed as a brown, earthy-smelling mixture containing about 99 per cent. of water. Mixed with sewage or sewage liquors, and in the presence of an ample oxygen supply, it rapidly separates the colloids and is associated in the oxidation of the organic matter present in the liquid. It is, in fact, humus in a free state. No longer anchored to the particles of soil or filtering medium, this free humus operates in the same manner as it does in rivers polluted to a degree insufficient to destroy its activity. Where pollution is so great as practically to de-aerate the water the aerobic life of the humus is destroyed, and the humus ceases to function as the beneficent agent it may be. Rediscovered in the process of blowing air through sewage, it is found to function satisfactorily, whatever the method of aeration of its habitat may be. Ardern and Lockett continued the work of Fowler in the extended air-blowing plants at Manchester. Haworth at Sheffield omitted the air-blowing, and propelled the mixture of sewage and free humus along shallow channels by means of paddles; relying thus on the continuous change of liquid at the air-sewage interface, he achieved like results. The conditions of natural purification to be observed in rivers were substituted for the similar conditions found to be associated with sewage purification on land or biological filters, and, while the results were equally satisfactory, their attainment was more economical in time, in area required, and in cost.

The treatment of sewage by free humus is now the subject of a variety of methods of application. Mr. Martin's book is an excellent guide to these various applications of the process. The data such as the chemist, the engineer, or sewage-works manager desires are well selected, clearly set out, and cover very completely the field of operations in which "activated sludge" has been chosen as the purifying agent.

THE F.R.C.S. ENGLAND AND CANADIAN CANDIDATES.

THE Council of the Royal College of Surgeons of England has had under consideration a proposal made a couple of years ago by the Canadian Medical Association expressing a desire that facilities should be arranged for Canadians, by post-graduate study and examination, to obtain the Fellowship of the Royal College of Surgeons. In the annual report of the Council of the Royal College of Surgeons for 1925 it was stated that the matter had been referred to a subcommittee to report on the desirability of substituting an examination in applied anatomy and physiology and in pathology for the present primary examination in anatomy and physiology. The subcommittee reported against this course, and the Council has recently resolved that no alteration should be made in the subjects of the primary examination for the Fellowship. The Council then decided that it was desirable to send examiners to the Dominions to conduct a primary examination for the Fellowship of the same standard as the examination in this country, and the secretary of the College, Mr. S. Forrest Cowell, and the Director of Examinations of the Conjoint Board, Mr. F. G. Hallett, were instructed, in consultation with the President, to enter into negotiations with the proper authorities in Canada regarding the conditions under which the arrangements for the examination could be made. It is hoped to send to Canada within a few days some suggestions, and it is thought that it may be possible to arrange for an examination to be held in Canada some time in the summer of 1928. The final examination for the Fellowship will continue to be held in this country. The subcommittee, before presenting its report to the Council, had a conference with the examiners in anatomy and physiology. The first question discussed was as to the most suitable time in the career of a candidate at which he should be required to pass the examination, and it was agreed that for various reasons it was essential that the examination should be open to third-year students as well as to men already qualified, and that therefore the examination should be framed in such a manner as to enable both classes of candidates to be treated on equal terms. The objection that it was difficult for a qualified man to go back to pass the same standard in anatomy and physiology as a third-year student was met by the expression of the opinion by the examiners that a general all-round knowledge of anatomy and physiology, such as the primary Fellowship requires, was essential if the candidate was to obtain the broad outlook necessary to enable him to reach a standard of attainment such as the Fellowship of the College should demand. On the subject of the high percentage of rejections, which was also discussed, several of the examiners who, as teachers, had a knowledge of the candidates, said that a good student who had passed well at the intermediate M.B. examination, and had worked for another six months, almost invariably succeeded in passing the primary Fellowship examination. The high percentage of rejections was largely due to the moderate and weak students, who, having successfully negotiated the M.B. examination with a bare pass, entered for the primary Fellowship examination on the offchance of passing. That high percentage was not evidence of an unsatisfactory form of examination, or of its uncertainty as a test of knowledge, but was due to three principal causes: first,

a failure to realize the high standard of all-round knowledge required; secondly, a system of cramming, instead of regular work in the dissecting room and physiological laboratory; and thirdly, a tendency to neglect the ordinary basic facts in favour of the latest theories and experiments. In recent years the questions both in anatomy and physiology showed a more decided bent towards medicine and surgery, but the examiners did not agree that the questions should be made still more medical and surgical, because that would involve a loss of a general all-round knowledge of human anatomy and physiology.

THE NEW DEATH CERTIFICATE.

IN last week's JOURNAL (p. 1118) we gave a full account of the provisions of the Births and Deaths Registration Act, 1926, as far as they affect the duties and responsibilities of medical practitioners in relation to stillbirths, death certification, the viewing of the body of a deceased person, and the disposal of such bodies. The Act comes into force on July 1st, and we make no apology for once more directing the attention of practitioners (especially of general practitioners and of the medical officers of hospitals and institutions, on whom the duty of certifying the cause of death usually falls) to the requirements of the Act and of the Registrar-General in accordance therewith. Books of the new forms of certificate can now be obtained from the registrars of births and deaths, together with supplies of the official franked envelopes in which the certificates may be posted to the registrar. Attached to each actual certificate form is (1) a counterfoil, which should in all cases be filled up; and (2) a tear-off portion, constituting the notice that the certificate has been signed, which the practitioner is now legally required to give to the person liable to act as informant of the death for registration purposes. There is an important change as to the manner in which the particulars of the cause of death are henceforth to be stated. The nature and purpose of this change are described in the notes contained in each book of certificate forms, and in the article in last week's JOURNAL, to which we would again refer readers. It is essential that certifying practitioners should be as careful and accurate as possible in giving the information required, and an appeal is made for their co-operation in what is really an important piece of research work for the public advantage. Arrangements have been made for the publication of annual statistics regarding the extent to which the bodies of deceased persons are viewed by practitioners. It is desirable to encourage this practice in the case of a large proportion of deaths, and practitioners may be reminded that the registrar is directed to bring to the notice of the coroner cases in which the death certificate discloses the facts that the body has not been so viewed, and that the deceased person has not been seen by the certifying practitioner within a period of a fortnight before death.

THE ROMANCE OF ECONOMIC BOTANY.

THE romantic aspect of experiment and discovery in science was illustrated in a paper on the quest for economic plants read before the Royal Institution by Dr. A. W. Hill, director of the Royal Botanic Gardens, Kew, on April 16th. From prehistoric times economic plants were transported about the world, accidentally or otherwise; so that the staple crop of Gambia, the West African ground-nut, was probably introduced from South America by early travellers, and the West Indian sugar cane probably came from the East Indies. The attempt made in 1787, under the auspices of Sir Joseph Banks, first director of Kew, to introduce the bread-fruit from the Pacific Islands to the West Indies, was one of the earliest historical attempts at plant introduction, and was ultimately successful in 1793. The invention of Wardian cases, a kind of miniature greenhouse, by an examiner to the Society of Apothecaries in the nineteenth century, made possible the introduction of tea from China to India in 1848, of cinchona from the Andes through Kew to India, and of Para rubber from Brazil through Kew to the East. A relic of the German occupation of the Cameroons is still to be seen in a small experimental plot of tea at Busa, 3,000 feet above sea level. Dr. Hill described problems which arose in the cultivation of economic plants. Thus, the edible banana rarely sets seed; it is also highly susceptible to Panama disease. The problem is to cross a seed-bearing variety which is immune to the disease with an edible form such as the Gros Michel, and produce a seedless and resistant banana. But this banana must also have a thick skin in order to travel well; it must be of suitable size to invite purchasers; and it must be properly curved inwards on the bunch so as to be easily packed. The flavour, it appears, is a secondary consideration, as banana consumers are not usually connoisseurs. Dr. Hill described many of the pests against which the plant introducer has to fight, with the help of Kew and of the Imperial College of Agriculture in Trinidad; and showed that the romance of economic botany provides serious occupation for the plant physiologist, the pathologist, the agricultural chemist, and the geneticist.

THE REFORMED GOLD MINES.

ON July 1st next the Metal Grinding Industries (Silicosis) Scheme comes into force in Great Britain. It applies only to total disability due to silicosis or to silicosis accompanied by tuberculosis, or to the death of a workman from the same cause as certified by a medical referee. No doubt plenty of difficulties will crop up in the administration of this scheme, but we only allude to it now in contrast to the immensely greater scheme—mainly preventive—which has been so successfully carried through by the Medical Bureau of the Miners' Phthisis Board of South Africa under Dr. Watkins-Pitchford, its late chairman. A fascinating story of what has been done, how it has been done, and what still remains to be done is told by Dr. A. Mavrogordato, Research Fellow in Industrial Hygiene to the South African Institute for Medical Research.[1] In the gold mines the full-time services of nine medical examiners, a medical radiographer, a pathologist, and five photographers have set the engineers to work, with the result that the original type of the disease has changed from "a pure fibroid non-tuberculous type, the commonest and most characteristic form," as expressed in 1903 by the Transvaal Medical Society, to that which silicosis has apparently always assumed in this country. Thus Haldane, in his report on the health of Cornish miners in 1904, attributed great importance to tuberculous (or possibly other bacterial) infection. The change in type is from bulky lungs of the consistency of rubber, and characterized by right-sided heart failure, oedema, and dropsy, to lungs of ordinary size, without massive fibrous tissue, without failure of the heart, but still destroyed by superimposed infection. This change reflects the preventive measures adopted. At the commencement of the industry the prevalence of the disease was 30 per cent., owing to a dust content of the mine air which, at the beginning of the period, was 150 milligrams per cubic metre; by 1911 it was 20. By still further reduction in the dust content to 5 milligrams the prevalence was reduced to 3.3 per cent.; since 1920 the dust has gone down to about 2 milligrams per cubic metre. Even this great diminution is not

[1] *Contributions to the Study of Miners' Phthisis.* By A. Mavrogordato, M.A.Oxon., M.R.C.S., L.R.C.P. Publications of the South African Institute for Medical Research, Johannesburg. No. xix, vol. iii. (Cr. 4to, pp. 84; illustrated. 5s.)

considered wholly satisfactory, because a dust that can hardly disable *per se* may yet pave the way for a disabling infection. And even watering, which has done so much in allaying the dust, is not absolved from all responsibility, as such particles and bacilli as are still present in the air form the nuclei of droplets of spray constituting a more dangerous dust from the point of view of infection. In the early days men engaged in drilling who contracted the disease dropped out in two or three years, whereas now the average time in which simple silicosis is contracted has been lengthened to about ten years and a quarter. Moreover, it is only 3 per cent. of the total working miners, and only about 7 per cent. of those who have worked for ten years or longer, who annually become silicotic in any form. The conclusion reached in this section is that the engineer has about reached the limit of his capacity to improve conditions, and Mavrogordato raises the question whether medical intervention cannot carry the matter further by detecting and removing open tuberculous cases, among native labourers especially, and by raising resistance to tuberculosis by a suitable vaccine. The nodular structure of the silicotic lung is pictured by Mavrogordato as due to the incursion of hordes of the "large mononuclear phagocyte" (synonymous with the "macrophage" of Metchnikoff and the "dust-cell"), which are retained as specific cell traps; they aggregate together, with their content of dust and bacilli, into tubercles and pseudo-tubercles, eventually either themselves becoming fibrous tissue or stimulating its formation. The lung acts as a "specific filter," and becomes thus sown with the specific "cell traps." A difference between South African experience and that at home is that fibrosis of the lungs, at any rate in the pottery industry, has been diagnosed by medical examination at a period of employment earlier than that at which silicosis has been found by radiological examination in the same occupational groups. Among the microphotographs with which Mavrogordato illustrates his thesis are some showing the fibrosis taking place in the glomeruli and round the collecting tubules of the kidney. These have importance because the view that silica in a colloidal form has a specific poisonous action is now gaining ground.

ANTIVIVISECTION MEETINGS.

On the same day last week—Thursday, June 16th—three meetings were held by antivivisectionists. One was the annual meeting of the National Canine Defence League, presided over by Sir Robert Gower, M.P., who moved the second reading in the House of Commons of the Dogs' Protection Bill; he said that he had received a letter from Lord Dawson of Penn inquiring whether it would be congenial to the meeting if he were to attend and speak. The chairman said that he had assured Lord Dawson that he would receive a fair hearing. Lord Dawson began by saying that it might seem strange to the audience, but he was a great lover of dogs, and was the happy possessor of two dogs; one of them practically never left him, either at work or play. One of these dogs had lately become a victim of a serious disease, the "yellow disease," the mortality of which had been 70 per cent. Nowadays, owing to the discovery of a new remedy, the recoveries amounted to 70 per cent. The support for the experiments on dogs came, he said, from the medical profession, and not from one section of it. This statement produced an uproar, but when the chairman succeeded in procuring silence Lord Dawson observed that the scientific position was a matter for experts, and it was only on ethical grounds that opposition to vivisection could be raised by the general public. Dogs and other animals had one advantage over human beings, in that they had no power of anticipation, no consciousness of duty to others left behind, and no family or social ties. It was not so much the physical suffering that troubled human beings in illness, but the thought that near and dear ones might suffer. The performance of an experiment on an animal was similar to an operation on a human being; he had never seen any material difference. When Lord Dawson had concluded, the chairman declared that nothing Lord Dawson had said altered his conviction that vivisection was wrong. Nevertheless, the medical profession will admire Lord Dawson for spontaneously taking upon himself the disagreeable task of facing a hostile audience which did not wish to be convinced. Another antivivisection meeting was the annual meeting of the Council of the British Union for the Abolition of Vivisection; this was presided over by its president, Dr. Walter R. Hadwen, who said that the whole opposition met by antivivisectionists was based on the argument of the usefulness of vivisection. Their opponents, he said, declared that it was useful, and the general public would ask what were a few guinea-pigs or dogs or cats to the salvation of the human race. It was claimed that only medical men could know anything about the question; they knew less than anyone about it, and were too busy getting in the "bawbees" to bother about any question of that sort. Antivivisectionists declined to ask for anything short of the total abolition of that "iniquitous crime." Other speakers protested against experiments with poison gas on animals, and a resolution calling for the closure of the Porton establishment was carried. A resolution was also passed calling on the Government to refuse to comply with the petition of medical and scientific bodies that stray dogs should be handed over for experiment. The third meeting was the annual public meeting of the British Union for the Abolition of Vivisection; this lasted two hours, but uproar appears to have continued all the time, and the meeting broke up without transacting any business. It was said that the interrupters were medical and other students; if so we can only regret their action, for though the provocation has been great, no good could be expected to come of disorder, which should be left to the rowdy element of the antivivisection organizations. Yet another meeting had been held a day or two before; this was called by the Animal Defence and Antivivisection Society to protest against the memorandum recently issued by the Medical Research Council asking for an amendment of the present law to enable the police to hand over stray dogs for experiment. The Duchess of Hamilton was in the chair, and the chief speaker was Miss Lind-af-Hageby, who has been engaged in the agitation for a good many years. Dr. John Shaw also spoke, alleging that vivisection had undermined the morality of the medical profession. Other speakers indulged in similar foolish remarks. It can only be regretted that all these societies are kept alive by the donations and bequests of misguided persons who believe in the assertions made by the agents of the societies, and give or leave money for the perpetuance of the agitation. So far as we can gather, the antivivisectionists, taking them by and large, have now rather given up the public defence of their old contention that vivisection is useless, and are basing their opposition mainly on the ground that the practice in unethical and immoral.

THE PREVENTION OF RABIES.

Rabies is so essentially an international disease that it was almost inevitable that it should attract the attention of the Health Organization of the League of Nations. A conference was summoned in Paris during the last week in May, and a large number of scientists of all nationalities met at the Pasteur Institute. Three main aspects of the disease were considered—the nature of the virus, the results of treatment, and the prevention of disease in

animals. The modern concepts of French and other workers of the nature of the causal organism of rabies have previously been stated in these columns, and the commission confirmed the belief that the virus was filterable, but decided to leave as *sub judice* the organism described by Levaditi and Manoulian; nor did it decide whether the familiar Negri bodies were stages of the organism or cell degenerations. Opinion as to the efficiency of the Pasteur treatment by the original dried cord method and by the glycerinated cord method was unanimous. Similarly, it was considered that a virus killed or attenuated with carbolic acid or ether produced a satisfactory immunity, but it is recommended that such vaccines should receive more extensive trial on a larger scale, and that inquiries should be made into the plurality of strains, and into the rabicidal action of the serum of man and animals during and after immunization. While refusing to propose important changes in sanitary legislation, the commission, when considering the vaccination of animals, expressed the view that it was desirable to give dogs prophylactic vaccination against rabies, using a single inoculation of killed or attenuated virus (as we have previously described), and repeating this inoculation at yearly intervals. This would, of course, necessitate some form of administrative supervision and inspection of vaccinated dogs. Dogs, even if vaccinated, known to have been bitten by a rabid dog should be destroyed; but it was thought that if they were only suspected of having been bitten they might be vaccinated, provided they were isolated for six months. Prophylactic curative vaccination of cats is not recommended in any circumstances. Other animals should be vaccinated only in areas where the disease is particularly prevalent; and vaccination after the animal has been bitten is recommended. The conference expressed the view that the only measures which will completely eradicate rabies are the restriction of the liberty of the dog, unless muzzled, to the premises of its owner, and the destruction of the ownerless stray. It is recommended that these measures should be embodied in the legislation of the various countries. It was exactly by these measures, of course, that rabies was eradicated from Great Britain, and should it be accidentally reintroduced—a remote contingency so long as all animals entering are subjected to a six months' quarantine—their re-enforcement will be necessary. Other countries are less fortunately situated, but it is obvious that any action to eradicate the disease in Continental countries must be concerted, and for this purpose no better agent than the League of Nations could be selected to unify the actions taken by different countries. This new spirit augurs well for the future, and it may be that we are within sight of the complete disappearance of a most infectious and deadly disease.

GOVERNMENT LYMPH.

THE disappointment felt by many medical practitioners at the refusal of the Local Government Board, and afterwards the Ministry of Health, to allow them to obtain small-pox vaccine from the Government Lymph Establishment for use in private practice has not infrequently been expressed in our columns for a good many years past. The matter has now attracted some public attention, and in an article on the recent small-pox outbreak in Hendon and Hampstead the *Times* expressed the opinion that this refusal was inconsistent with the zeal now being shown to persuade people to protect themselves; the article suggested that the Ministry of Health should take steps to defeat propaganda against "impure lymph" by placing at the disposal of any registered medical practitioner lymph prepared under official authority. The article drew a letter from Dr. S. Monckton Copeman, who originated the methods used at the Government Lymph Establishment for preparing glycerinated lymph, officially adopted some thirty years ago by the Local Government Board for public vaccination work. He expressed the view that the existing state of affairs was unsatisfactory. The official reasons for restricting the supply of lymph to public vaccinators were that any other course would be unfair to private traders (some of whom, we may remind the Ministry, deal in foreign produce); that the cost of extension would be prohibitive; that official returns of the results of vaccination could not be demanded from private practitioners; and that it was impossible to provide sufficient staff for inspection of the work of vaccination. The last objection, Dr. Copeman pointed out, has disappeared, as official medical inspection has practically ceased. All the other objections would be met if a reasonable charge were made for supplies of lymph to medical men other than public vaccinators. The income from the increased output would probably more than cover the cost of any additional overhead charges, official returns would not be necessary, and no valid objection could be urged on behalf of institutions or individuals interested in the manufacture and sale of vaccine lymph. On the other hand, many private practitioners are no doubt quite well satisfied with things as they are; our only concern is to point out that the objections made to the general supply of Government lymph are not insurmountable.

THE WRITER AND THE EDITOR.

THE relations between the editor and the contributor were the subject of an interesting debate, opened by Sir Richard Gregory, editor of *Nature*, at a recent meeting of the Circle of Scientific, Technical, and Trade Journalists. Discussing the question whether an editor is justified in suggesting the character of a review or in altering it when sent in, Sir Richard Gregory condemned with proper emphasis the "trimming" of a review to suit any commercial or other consideration. For, as he well said, an editor's prime responsibility is to his readers, who trust him to provide interesting and accurate matter. Reviewers, he finds, and so do we, differ greatly in their understanding of what should be meant by a review. One kind of review he particularly dislikes is that which gives little more than a list of the chapters and a brief indication of what each chapter contains; such a conspectus he thinks more suited for the advertisement columns. To him a good review is one which makes the reader feel that the subject thus opened up is interesting and worth further exploration, whether by buying the book in question or in some other way. A thornier matter touched upon by Sir Richard Gregory was the extent to which an editor could legitimately alter the style of a contribution. It must be assumed, he said, that punctuation might be rectified, but some contributors very much objected even to slight changes in phraseology or style. Further, the editor had the right to decide the title of the article, and he should take a stand against any author who indulged in grammatical barbarisms and objectionable phrases. Among the common phrases Sir Richard found objectionable were "for instance" in place of "for example"; "it goes without saying" for "it need scarcely be said"; and "phenomenal" for "remarkable." Lack of uniformity in the use of capital letters was another matter to which he took exception, contending that it was an editorial fault to permit different systems to be followed according to the fancy of different contributors in the pages of the same journal. He spoke feelingly when he said how rarely a quotation was perfectly correct, though it was, of course, not always possible for an editor to verify every quotation and reference. He also touched on the question of how far an editor was justified in inserting cross-headings. Should this be left to the

contributor? Bearing in mind how few authors had more than the vaguest knowledge of type-setting and blocks, and how commonly in authors' proofs unnecessary corrections were made which involved the overrunning of a number of lines—a costly proceeding—he asked how far an editor was justified in disregarding such corrections. Sir Richard Gregory maintained that the sound working rule was that an editor can do what he likes with an unsigned article without the contributor having any right to object, though out of courtesy he might refer some points to the author; but he doubted whether in ordinary circumstances an editor had a similar right to make definite changes in a signed article. Upon this point there can, we think, be little room for doubt. Without consulting the author an editor has no such right in any ordinary circumstances, but occasionally it may be impolitic to enforce the rule too rigidly. One case that occurs to us is that of an obvious oversight in an article received from a distant part of the world, where the plan ordinarily followed by a printer—namely, to query the passage in the proof—would cause great delay owing to the length of the post. But if, as occasionally happens, an author within easy reach does not answer queries, what then? Another case is where at the last moment some passage is found upon which an action for libel might be based; if the author cannot be reached the question arises whether he would wish his communication withdrawn, or the peccant passage omitted or modified. If the first alternative is feasible the difficulty disappears, but in any event an editor must not print anything he suspects to be libellous. Finally, Sir Richard Gregory threw out the suggestion that it might be well to institute a school for technical authors, so that they should learn what was easily possible and what was quite impossible or unreasonable in the matter of correction after an article had been set up. This last suggestion was taken up during the discussion rather more seriously than might have been expected, and it was ultimately decided to refer the matter to a subcommittee of the Circle with a view to the preparation of short instructions, covering both the writing of scientific and technical articles and the correction of proofs.

FOREIGN BODIES IN BRONCHI AND OESOPHAGUS.

THE article by Mr. Tilley on bronchoscopy and oesophagoscopy with which this issue opens will help to increase the general interest in these methods, especially in respect of their value for the removal of foreign bodies. The whole subject, it may be remembered, was very fully discussed by Professor Chevalier Jackson of Philadelphia in a paper read to the Section of Laryngology at the Annual Meeting of the British Medical Association at Bath, published in our issue of October 17th, 1925 (p. 686). Before this (July 26th, 1924, p. 145) Mr. Waggett had reported a case in which a tooth-plate one and a half inches long and over three-quarters of an inch wide was successfully removed, and the patient made a rapid recovery. In Mr. Tilley's paper we have a number of accurate clinical histories compiled by a trustworthy observer; they will stand as a permanent record, and the paper is a contribution of which the value will remain unaltered by the passage of time. Several lessons are to be learnt from the cases related; these concern those first called to see such cases rather than those skilled in the use of endoscopic apparatus, and they are lessons which at the present day have been learnt only too frequently by the occurrence of a disaster. It is always unsafe to disregard a patient's complaint that he has either swallowed or inhaled a foreign body, for the immediate symptoms are often slight and transient, and the silent period soon follows. Removal of the foreign body at this stage is likely to be comparatively easy and safe, whereas delay in summoning efficient aid may allow severe complications to arise, which come on insidiously, and may compel the operator to face unnecessary dangers and even insuperable difficulties. Leaving aside technical questions, which can only be mastered by those having the opportunities for practice in this very special work, Mr. Tilley has chosen his case-histories to illustrate these and other points of a general but all-important character. From their very nature such cases arise in the most unexpected and disconcerting circumstances, yet, efficiently treated, they form a singularly satisfactory class, and it is well once again to call general attention to the value of the oesophagoscope, the bronchoscope, and the *x* rays in this striking manner, and to emphasize the conditions which allow them to be employed to the fullest advantage.

PULMONARY SCHISTOSIS.

THE effect of the dust created in their work on the health of slate quarrymen, splitters, and dressers has for many years been a moot point. Medical men practising in Wales, and quarry managers, are stated to have denied that slate dust injuriously affects the lungs. In France treatises have been written on *La Schistose* producing symptoms—emphysema, asthma, congestive attacks followed by pleurisy or pneumonia—suggestive of excessive inhalation of a not very injurious form of dust. Now Dr. T. W. Wade[1] of the Welsh Board of Health adduces evidence, mainly statistical, to incriminate the industry as the principal reason why, in the Gwyrfai rural district (which includes Snowdonia), the mortality rate from tuberculosis is higher than the general rate in the country, and higher in men than in women. The phthisis developing late in life in slate workers, he insists, supports the view now generally held that siliceous dust must be looked to as the cause of the phthisis. He finds, further, that the effect on the lungs of the quarrymen is not statistically so marked as on the hand trimmers, who work in sheds in which a thin haze of dust floats. On the other hand, the charts show that, in addition to this old-age mortality peak, a high mortality peak exists for both males and females in the young adult period of life. Dr. Wade is unable to explain this, although in two quinquennial periods—one before and the other after the war—the male and female rates from tuberculosis of the respiratory system were approximately double those of the rate for England and Wales. It seems a pity that other departments, such as the Home Office, with which the enforcement of preventive measures lie, were not associated with the inquiry from the first, as the present report contains no dust determinations, no results of the physical examination of the workers, or of *x*-ray photographs or *post-mortem* examinations. Dr. H. H. Thomas, petrographer of the Geological Survey, found that the most numerous particles were micaceous, and that in the sample submitted to him quartz came next. The majority of particles were very minute—about 1 micron—few reaching 5 microns. Chemical analysis showed that free silica was rarely present in a proportion of more than 60 per cent.

A NEUROLOGICAL JOINT MEETING.

A COMBINED meeting of the Section of Neurology of the Royal Society of Medicine and of the American Neurological Association will be held at the house of the society at the end of July. There will be a reception on the evening of Monday, July 25th, at 9 p.m., and on the following morning short papers will be read. On Wednesday, July 27th, at 9.30 a.m. a discussion on the cerebellum will be opened by Dr. F. Tilney, Dr. H. A. Riley, Dr. L. J. Pollock, Dr. L. E. Davis, Dr. A. J. Mussen, Dr. T. H. Weisenburg, and Dr. Harvey Cushing. On Thursday morning a discussion on sensory disorders in organic disease

[1] A report of an investigation into the alleged high mortality rate from tuberculosis of the respiratory system among slate quarrymen and slate workers in the Gwyrfai rural district. By T. W. Wade. Ministry of Health (Welsh Board of Health). 1927. Price 1s. net.

of the nervous system will be introduced by Professor J. S. B. Stopford, F.R.S., Dr. Wilfred Harris, Dr. Gordon Holmes, and Dr. S. A. Kinnier Wilson. In the afternoon short papers and demonstrations on pathological subjects will be given, and at 5 p.m. the Hughlings Jackson Lecture will be delivered by Dr. Charles L. Dana; in the evening there will be a banquet. Those who wish to read papers or show cases should communicate with Dr. W. J. Adie, joint honorary secretary of the Section of Neurology, at 1, Wimpole Street, London, W.1.

THE OXFORD OPHTHALMOLOGICAL CONGRESS.

THE Oxford Ophthalmological Congress will be held this year on July 7th and two following days. It will be opened by an address given by the Master, Mr. Philip H. Adams, B.M., F.R.C.S., on Thursday, July 7th, at 10 a.m.; the rest of that morning will be devoted to a discussion on the results of the operative treatment of glaucoma, to be opened by Dr. William H. Wilmer, ophthalmologist in chief to the Johns Hopkins Hospital, Baltimore. In the afternoon Professor F. Lagrange of Bordeaux will give an address on the best procedure to adopt for fistulization of the glaucomatous eye. A number of demonstrations will be given in the scientific and commercial museums in the afternoon, and the annual dinner will be held that evening in the Hall of Keble College, where the congress has its headquarters. On the morning of Friday, July 8th, Professor K. K. K. Lundsgaard of Copenhagen will give the Doyne Memorial Lecture, on the pneumococcus in connexion with ophthalmology. In the afternoon there will be a clinical meeting at the Oxford Eye Hospital. On the morning of the last day of the Congress (Saturday, July 9th) a series of addresses will be given in the Department of Human Anatomy. The full programme can be obtained from the Honorary Secretary, Mr. A. Bernard Cridland, F.R.C.S., Salisbury House, Wolverhampton.

SWISS CONFERENCE ON GOITRE.

WE have already announced that the Swiss Goitre Commission has arranged for a conference on goitre, to be held in Berne at the end of August; we have now received some further details. The conference will be opened in the aula of the University on the morning of August 24th by the president, who will give an address on the general distribution of goitre; this will be followed by a discussion on the pathological anatomy of endemic goitre, to be opened by Professor L. Aschoff of Freiburg, Professor C. Wegelin of Berne, and Dr. David Marine of New York. In the afternoon the pathologic physiology of the thyroid will be considered by Dr. Plummer of Rochester, U.S.A., Professor von Eiselsberg of Vienna, and Professor de Quervain of Berne. The whole of August 25th will be given to the question of the etiology and epidemiology of endemic goitre; the opening addresses will be contributed by Professor Bérard of Lyons, Lieut.-Colonel R. McCarrison, I.M.S., of the Pasteur Institute, Coonoor, India, Professor Galli-Valerio of Lausanne, and Dr. E. Bircher of Aarau. On August 26th, the last day of the conference, the prophylaxis of endemic goitre will be the subject of discussion, and in the afternoon a cinema film illustrating cretinism will be shown. Those members interested in the surgery of goitre may stay on till Saturday, August 27th, when Professor de Quervain will hold a demonstration in the surgical clinic. As will be seen, the conference will deal with no matter other than goitre. Further information can be obtained from the president, Dr. H. Carrière, Service fédéral de l'Hygiène Publique, Berne.

IT may be remembered that last autumn the Committee of Representatives of the Royal Society, the Royal Colleges of Surgeons of England and Ireland, and the Universities of Edinburgh and Glasgow, awarded the Lister Medal—founded to recognize distinguished contributions to surgical science—to Professor von Eiselsberg of Vienna, who will give an address at the Royal College of Surgeons of England at 5 p.m. on Thursday, July 7th. There will be a reception from 4 to 5 o'clock, and the specimens added to the museum during the year will be on view.

A FORTNIGHT ago we stated that Professor Pavlov underwent an operation on May 27th for gall stone; as he is nearly 78, and has been in indifferent health for several months, some apprehension was felt as to whether, in his debilitated state, he would be able to withstand the operation. We are glad to announce that, though after the operation he suffered from bronchitis for a time, this passed off, and a fortnight later he was judged to be on the high road to recovery. Dr. Horsley Gantt, writing to us on June 9th, said that he had seen Professor Pavlov on the previous day, when it was expected that he would be able to get about again within a week.

IT may be well to remind members who propose to attend the Annual Meeting of the British Medical Association in Edinburgh next month that the Hotels and Lodgings Committee has engaged all the available rooms in the city. Dr. Drever, the Scottish Medical Secretary, 6, Drumsheugh Gardens, Edinburgh, has undertaken the work of allocation, and members requiring rooms should communicate with him without delay. Very few single rooms are available in hotels, but there are some in boarding houses and hostels, and there are plenty of double rooms. Members proposing to attend the meeting who have made their own arrangements for accommodation are requested to notify Dr. Drever.

Nova et Vetera.

PARISH REGISTERS.

IT is generally supposed that the institution in the year 1538 by Thomas Cromwell of parochial registers, like Edward VI's foundation of grammar schools, was an attempt to fill a gap left by the abolition of the monasteries. Both suppositions have little foundation. The monasteries only concerned themselves with the registration of deaths of important persons, or at least of such as were wealthy enough to have left money to secure prayers for the repose of their souls; and the educational activities of the monks in the sixteenth century have been very greatly exaggerated. Had the enactment of Henry VIII's minister, and that made later under Elizabeth, been properly observed we should now have had in our possession a complete record of deaths, marriages, and births (or baptisms) for nearly four centuries. Unfortunately the duties thus thrust upon the clergy were unremunerated, and parishioners successfully resisted the imposition of registration fees. The bishops and consistories on whom, in 1597, Elizabeth placed the onus of keeping transcripts of the parish registers also in too many cases neglected their duties, and so it came about that by the year 1801, when the first census was taken, only 812 registers dating from 1538 were in existence in the 11,000 parishes of England. However zealous bishops, priests, and deacons may have been in the performance of their spiritual duties, they failed lamentably in the carrying out of their civil obligations. Even those poor 812 out of 11,000 registers are no longer all in existence, for a return made in 1834 showed that even that small number had decreased owing to the negligence of the clergy in the interval. Such as they were, the parish registers of England and Wales and the bills of mortality of the

City of London (BRITISH MEDICAL JOURNAL, October 9th, 1926, p. 645) formed the only basis on which estimates of the public health could be made for nearly three centuries, until the passing of the Acts for the civil registration of births, deaths, and marriages in 1836.

Luckily for the antiquarian and the social student there are extant a good many registers or their transcripts which, if not dating from 1538, nevertheless go back to the sixteenth century. Those for the parishes of Appledore and Eboney in East Kent begin in the year 1563-64 and are nearly perfect down to 1812. Fortunately for us these have fallen under the notice of that excellent antiquarian and student of medical history, Dr. William Cock of Appledore, who has just published a pamphlet containing his notes and reflections.[1] Dr. Cock's family have lived in Appledore for generations, and he has that sympathy for the land and its people which confers upon him the gift of making such dry bones live, so that his quotations and comments on the local records are full of interest, but of necessity many of them are connected with local topography and history only.

We are apt to regard the peaceful old villages of the English agricultural districts as having stood where they are since the Norman Conquest at least, the only changes being in the nature of rebuildings. These notes, however, and other local investigations of the same kind bring home to us the many sweeping changes that have occurred in the situation of roads and houses, as well as in population, in many an ancient village or "town" in the agricultural counties.

Appledore village is on the edge of Romney Marsh and much of the parish consists of marsh land where, until the introduction of quinine, ague was rife. Dr. Cock attributes the waves of poverty, which have left their marks in the register, to this scourge. There are just as many gnats as ever, and the marsh is no drier than it was; it seems therefore probable that to quinine is partly due the disappearance of malaria, although there must have been other factors at work here, as elsewhere, which are even yet not accurately known.

Appledore was, and is, too small to support a medical man, but it has at sundry times been the centre where one has lived and practised in the country around. Thus it is recorded in 1700: "Sep. 20. John Allen, a young man, our Surgeon and Physitian buried." Seventy years later one of his successors named William Durand, uncontrolled by any medical council or ethical committee, advertised himself in a Canterbury paper in the following terms:

> "Wm. Durand, Surgeon and Apothecary, begs leave to inform the Public that he has taken a Shop at Appledore, in Kent, where he proposes to practise Surgery and Physick; the experience which he has obtained in his Profession during a regular Apprenticeship in London, which he regularly served under a Gentleman of great practice, will, he presumes to flatter himself, recommend him to the Favor of the Inhabitants of this part of the Country; and those who think fit to call in his Assistance, may depend on his utmost Care and Assiduity in the Discharge of his Profession."

Such an advertisement was probably becoming unusual in 1770, and it is likely that the practitioners already established in the neighbourhood viewed it with disfavour. Durand seems to have established himself, however, and lived in Appledore twenty-two years, for his death is recorded in the register in October, 1792. Daniel Price, who published a quarto book on sheep farming in 1809, described himself as "Surgeon of Appledore." He seems to have been a practitioner of the Sangrado school, who lived (and died) up to his principles. He used to bleed himself much and often; he finally died from syncope caused by haemorrhage, and was found dead with his lancet in his hand. One wonders how many patients he had sent before him down the same road, by the same means.

We recommend all our readers who are interested in the short and simple annals of the poor—for it is of them that the notes mostly treat—to send for copies of this pamphlet and thus at once enable the Appledore village hall to be built, and get their money's worth in the antiquarian lore of Dr. Cock.

[1] *Notes from the Transcripts and Registers of Appledore, Kent.* By F. William Cock, M.D., F.S.A. 1927. Price 1s. Sold for the benefit of the Village Hall Fund.

RESEARCH AND THE COMMUNITY.

STEPHEN PAGET MEMORIAL LECTURE TO THE RESEARCH DEFENCE SOCIETY.

AT the annual meeting of the Research Defence Society on June 21st the first Stephen Paget Memorial Lecture was delivered by Professor JULIAN S. HUXLEY, M.A., who took for his subject "Research and the community." Lord LAMINGTON, the President of the Society, and afterwards Viscount KNUTSFORD occupied the chair.

Professor Huxley passed rapidly over research in physics and chemistry, and devoted himself to the biological aspects, taking as his first example the value of research in agriculture. He said that as agriculture extended it brought with it two fundamental difficulties. With an increase of the density of a crop in a given area it became much easier for enemies of the crop to multiply and spread. The second difficulty was due to the increase of travel and transport facilities, which brought animals and plants into new areas where they were freed from the normal checks to their multiplication, and accordingly did damage. Dr. Tillyard, the eminent entomologist of New Zealand, who visited this country last year, told him that the introduction of the common blackberry into New Zealand had led to the growth of nothing less than jungles of impassable thicket. Such introductions were often made with the best intentions, but because the subject had not been sufficiently studied the consequences were sometimes unexpected and serious. The best way of coping with plants and animals in new situations might be to introduce the natural parasites. Without research on an intensive and extensive scale in these fields a great deal of agriculture—especially tropical—would become impossible. Institutes of applied biology were needed to study the whole relation between animals and their environment. Proposals were afoot to exterminate squirrels in the New Forest and pelicans on the American coast because of the damage they did, but any interference of this kind should only be taken as the result of careful research, lest it made matters worse. The phenomena attending plagues of rodents were beginning to be understood; apparently some factor connected with the weather allowed the animals to work up to a maximum of density, and then epidemics occurred which nearly wiped them out, but then the cycle began again. Another value of research in agriculture was from the point of view of breeding. Mendelism was the general law, and theoretically at least, with knowledge and patience, it was possible to build up animals and plants more or less to order, since their hereditary constitution was composed of a great number of independent units which could be shuffled and re-combined by selective mating.

Pure medicine ought to have regard to the broader aspects of biology, especially in connexion with the question of heredity. It had been found by the selective breeding of mice that strains might be obtained much more resistant or much less resistant than usual to cancer, and the same might hold good in the human species, not only with regard to cancer, but to other diseases. A knowledge of heredity was of first-class importance to medicine. Heredity and education were complementary in building up the community. Practically every great nation was changing its hereditary make-up, the composition of its racial stock. Wholly new characters or different combinations of old characters were appearing. Research, even to the extent of national stocktaking on a large scale, was needed in racial and social hygiene. Remarkable effects, which might or might not be biologically or socially desirable, were being produced through the crossing of races. Certain races under the British and other flags were actually dying out, and it seemed to be agreed by investigators that this was happening to some of the Melanesian races through psychological causes, because they had not the will to live or reproduce. An imperial bureau of anthropology was just as clearly needed as the imperial bureaux of entomology and agriculture recently established.

Coming finally to medical aspects of research, Professor Huxley mentioned that the expectation of life was now nearly double what it was in the early times of the Roman

Empire. All the discoveries, most of them recent, which had led to this prolongation of life as well as to diminution of suffering had been made possible through the methods of science—that is, observation and experiment, the two alternating, one incomplete without the other, but experiment always the final arbiter. Experiments could be made in various ways, in test-tubes in the laboratory, on animals, or on human beings, and it did not matter from the point of view of advancing knowledge in what way they were made. In the discovery of chloroform the experiments were first made on man, and various details afterwards worked out on animals. In regard to antisepsis and asepsis, he read Lister's published letter written in 1875, in reply to one from Queen Victoria's secretary, setting forth his experience of the value of animal experiment. Pasteur's work, which had been of enormous benefit both to human beings and to animals, was only made possible by research upon the latter. He mentioned also the proved value of vaccination against small-pox, the working out of the Schick test in diphtheria, and the discovery of insulin. Just at the time that insulin was made public a young colleague of his own, with the promise of a brilliant career, had to relinquish all hope of it on account of diabetes; within six months he was preparing to take up his work again. In the work on yellow fever the final experiments were done on human volunteers. It was observation and experiment which was showing how to get rid of sleeping sickness, malaria, and hookworm disease. The spread of malaria was one of the contributory causes of the downfall of Greece and Rome, and disease was the most serious single factor with which our empire in India was menaced. Knowledge and research were the conditions under which the complex civilization of our wide and heterogeneous empire was maintained. Without knowledge there could be no control. It was right to demand that all the avenues to knowledge should be open, for it was never known along which avenue new knowledge would come. Among other instances he mentioned the Schafer method of artificial respiration, which was the result of experiment by that eminent physiologist on half a dozen dogs. Much had been done for animals themselves as the result of animal experiment; it was enough to mention rabies, anthrax, and glanders, diseases which had also a human background. The opponents of the Research Defence Society had every right to insist on adequate supervision of experiment, but he believed that Government inspection was efficient, and that in fact no abuses had been proved. It was impossible to think that the problem of cancer would be elucidated or the work on the virus of sleepy sickness completed without further experiment. The Research Defence Society seemed to stand in the public eye for a body which existed to resist definite attacks made upon research on animals; that was important, but it had a wider function: it had to fight against apathy, ignorance, and bureaucracy and red tape, and no less against the exploitation of the results of research—gained with great labour and difficulty by scientific men,—for base ends.

At the close of the lecture Miss LIND-AF-HAGEBY, of the British Union for the Abolition of Vivisection, asked permission to put certain questions to Professor Huxley. The questions she wanted to ask were: Did the Research Defence Society recognize any ethical restraint on research? Did it deny that great pain and suffering were caused to animals in British laboratories? And if it denied that such pain and suffering were caused, would it exert itself to secure the opening of the laboratories to inspection by accredited representatives of humane societies?

Lord KNUTSFORD from the chair said that these were scarcely questions arising out of the lecture. For his own part he thought there ought to be as little pain as possible inflicted in vivisection, that every possible step ought to be taken to avoid pain, and that the laboratories should be properly inspected. But he also pointed out that any pain inflicted by experiment was small compared with the pain involved in the preparation of animals for food. He then proposed a vote of thanks to Professor Huxley, and asked Miss Lind-af-Hageby if she would be good enough to second it, which, amid laughter, she did.

Sir DAVID FERRIER presented the treasurer's report on the work of the society, which, he said, thanks mainly to a generous legacy left by the late Dr. John Hall, was now relatively well off. The report of the committee expressed thanks to the British Medical Association for so successfully organizing the conference on animal experimentation on April 4th last. During the year the membership of the society had been increased by about eighty members. The new vice-presidents welcomed were Lord Meston, Sir Theodore A. Cook, Dr. Alfred Cox (Medical Secretary of the British Medical Association), Lieut.-Colonel F. E. Fremantle, M.P., Sir Dawson Williams (editor of the *British Medical Journal*), and Sir Squire Sprigge (editor of the *Lancet*). The new members of the committee were Professor C. Lovatt Evans and Dr. F. W. Goodbody.

Canada.

[FROM OUR SPECIAL CORRESPONDENT.]

PROVISION FOR MENTALLY DEFICIENT.

THE care of the mentally deficient in Canada generally has been receiving a considerable amount of attention. A Royal Commission was appointed to investigate conditions in Nova Scotia, with the assistance of the Canadian National Committee for Mental Hygiene. Recommendations have been made *inter alia* for the appointment of a provincial psychiatrist, the establishment of psychiatric clinics, and the erection of a provincial training school for mentally deficient children, and legislation has been introduced for the carrying out of these recommendations. In this connexion the report of the provincial health officer for Nova Scotia is of interest, since it shows that the state of some of the local asylums is far from satisfactory. An attempt, however, is now being made in the penal institutions to study age in relation to recidivism. It is pointed out that "the moral regeneration of an individual without an accurate record concerning his antecedents cannot be rationally attempted," and attention is called to the present system, which has little tendency to prevent recidivism. More rational methods in dealing with offenders against the law are advised. In New Brunswick a mental hygiene council has been organized, and steps have been taken to present to the Provincial Government various aspects of the problem, including the need for special efforts to provide proper institutional care for the feeble-minded.

The Verdun Protestant Hospital in Montreal shows an ever-increasing list of incurable cases, and there is urgent need for more equipment and buildings. There will be some relief when the new wing at Bordeaux becomes available for the dangerously insane, who will be concentrated there from the various institutions of the province; but with the rapid growth of Montreal (estimated at 50,000 per annum) the Verdun institution is in urgent need of enlargement.

In Manitoba the provincial psychiatrist is undertaking a survey of school children in the province three years or more below standard in school grades, or who present other signs of mental deficiency. In the city of Winnipeg the work is being carried out in conjunction with the school medical officers and the outdoor clinic of the Psychopathic Hospital. This report is expected to provide guidance both for the Government and school authorities.

CHARGES OF MALPRAXIS.

Two cases of medico-legal interest have recently been reported in Manitoba. The first was an instance of death of a child 4 years old whilst under chloroform for a minor operation. The operator, who gave the anaesthetic himself, was charged with manslaughter. Expert evidence was adduced to show that it is sometimes impossible to tell whether a child is unfit for anaesthesia or not, and that chloroform was still a recognized anaesthetic in spite of the more general use of ether. Some criticism, however, was made of the fact that absorbent cotton-wool was used on which to drop the anaesthetic, instead of gauze, although the physician had been accustomed to the use of wool for over thirty years. He was acquitted.

In the second case a physician was prosecuted by the

parents of a child who had died of asphyxia neonatorum soon after birth. The doctor had arrived at the house about thirty minutes after being sent for, but had been refused admittance because the child was born before he came. In giving their verdict the jury fixed no blame on the parents, but rebuked the physician for not having forced his way into the house against the will of the parents and grandmother!

Campaign for Montreal Hospitals.

A five-day campaign was conducted in the city of Montreal for funds in aid of the two leading English general hospitals—the Montreal General and the Royal Victoria—as also of the Royal Victoria Maternity Pavilion. The financial conditions of these institutions had reached a stage at which a serious effort was necessary to pay off deficits and to assure them of future support. The objective aimed at was four million dollars, but at the end of the campaign it was announced that this amount had been exceeded by 735,000 dollars, and, as several more subscriptions came in later, the total will probably be close on five million. This gratifying result was due largely to the extraordinary enthusiasm and vigour of a group of leading business men; while the response came from the public generally, it was the large corporations whose contributions made the fund so rapidly and completely successful.

England and Wales.

St. Thomas's Hospital Medical School: Distribution of Prizes.

The Duke of Connaught, President of St. Thomas's Hospital, visited the medical school on Tuesday, June 21st, for the purpose of distributing the prizes. His Royal Highness was met by Sir Arthur Stanley (treasurer) and Sir Cuthbert Wallace (dean), and proceeded to the Central Hall, where he inspected a guard of honour furnished by the Medical Unit of the University of London O.T.C., after which he unveiled the memorial erected to those of the hospital who fell in the great war. This memorial, placed at the end of the Central Hall, is a large carved oak panel bearing the names of one nurse, seventy-four students, and nine employees, the actual war memorial of the hospital being St. Thomas's House, the students' residential club recently opened in Lambeth Palace Road, of which an account appeared in our issue of April 30th (p. 808). The Dean prefaced his report on the year's work by referring to the sad loss the school had suffered in the death of Mr. J. T. Adams and Mr. Billingshurst. As regards the medical school, the number of students was greater than it had been since 1921, while the school had received its share of academic honours and maintained a high average of excellence. In sport things had not gone quite as well as last year, but it was not possible to win everything every year! He hoped on the next occasion to be able to report the opening of the new students' laboratories. The Duke of Connaught, having presented the various scholarship prizes and medals, was invited by Sir George Makins to present to Mr. Chisholm Williams, F.R.C.S. (a former student of the school), the bronze medallion of the Carnegie Hero Fund, together with a cheque representing the first instalment of a pension awarded him by the trustees of the fund in recognition of his services to radiology. Mr. Williams and the late Dr. Barry Blacker had been pioneers in the investigation of the clinical uses of x rays, both for diagnostic or therapeutic purposes, and both operators had suffered, Blacker being probably the first man to die as a result of the action of the rays. While Mr. Williams had suffered less severely, he had, nevertheless, been so disabled that he was unable to practise. X rays had claimed many victims, but the misfortunes of the pioneers had led to more adequate measures being devised for their protection. Mr. Williams was heartily cheered as he received the award from the Duke of Connaught, who said it gave him particular pleasure to make that presentation. They all admired what Mr. Williams had done, and regretted that he should have suffered. It had also been a pleasure to him to distribute the prizes and, by attending the hospital, give some indication of the great interest he took in everything connected with it. It was gratifying to note that the numbers in the school were so large and that St. Thomas's House was being found useful. His Royal Highness, in congratulating those who had won at sports, said physical exercise was most valuable because it went a long way towards not only making a man healthy, but enabling him to "play the game." He had had the honour of being the president of the hospital for a number of years, and as time went on his interest and pride in the great work and glorious traditions of St. Thomas's increased. Mr. Boyson (senior almoner) proposed a vote of thanks to the Duke, and in seconding this Dr. A. E. Russell (senior physician) expressed the hope that the happy association between the hospital and members of the Royal Family would continue in the centuries to come as it had existed in those that had passed. His Royal Highness, accompanied by the treasurer, members of the Grand Committee, and the staff, then attended the Nightingale Garden Party.

Treatment of Rheumatic Children in Birmingham.

We learn from Dr. H. H. Sampson, chairman of the Medical Board, that the Children's Hospital, Birmingham, has undertaken the medical supervision of the rheumatic children in Birmingham in co-operation with the school medical service. An office has been established at the hospital, and the almoner is responsible for the after-care work and for arranging the periodical examination of these children. A printed paper of instructions on the care of their children is given to the parents. There is no special rheumatism or cardiac clinic, but the cases are distributed between all the physicians of the hospital. Beds are provided in the hospital for children in the acute phase of the disease; when that has passed they are transferred to Moseley Hall Convalescent Hospital (a continuation hospital of the Children's Hospital), there to await admission to Baskerville, a resident hospital school under the control of the Birmingham Education Committee. By this arrangement a certain number of children are provided with prolonged institutional care covering a period of twelve months.

National Association for the Prevention of Tuberculosis.

The thirteenth annual conference of the National Association for the Prevention of Tuberculosis will be held in London from June 30th to July 2nd; it will take place in the Great Hall of the British Medical Association's house, and will be opened at 10.30 a.m. on Thursday, June 30th, by Mr. Neville Chamberlain, Minister of Health. An address will then be given by Sir John Robertson, C.M.G., medical officer of health for Birmingham and professor of public health in the University of that city; his subject will be the relative value of present lines of attack of tuberculosis. In the afternoon a discussion on housing, with special reference to home conditions, will be opened by Dr. H. R. Kenwood, C.M.G., Emeritus Chadwick Professor of Hygiene in the University of London, who will be followed by Sir Oscar Warburg (London County Council), Captain R. L. Reiss (Garden Cities and Town Planning Association), and Sir William Younger, Bt. (member of the Royal Commission on Housing for Scotland). In the evening the annual meeting and reception will be held, when the Marchioness of Titchfield will speak on the future campaign of the association. On the second day (Friday, July 1st) a discussion on housing in relation to industrial conditions will be opened by Professor Edgar L. Collis, M.D. (University of Wales), and Sir Thomas Oliver, M.D. (professor of medicine, University of Durham). The afternoon of that day and the whole of the last day will be devoted to visits to the Preston Hall Industrial Settlement, Maidstone, and the Burrow Hill Colony, Frimley, and also to inspections of housing schemes in Hammersmith, and of the Welwyn and Letchworth Garden Cities.

Welsh National Medical School.

When last we dealt with the controversy which has been going on about the status of the Welsh National Medical School it was stated that negotiations were to be continued

between the University and the College, and that a further report was to be made to the July meeting of the University Court. Last week a conference was held at Cardiff between representatives of the College and of the University, when a friendly discussion took place, but no final decision was reached. A special subcommittee, representative of both sides, was, however, appointed to continue negotiations and present a report to another meeting, which is to be held as early as possible.

BRISTOL ISOLATION HOSPITAL.

The new buildings added to the Bristol Isolation Hospital at Ham Green were opened on June 16th by the Lord Mayor. There had, he said, been great progress during the last forty years in the provision made for persons suffering from infectious diseases. Before 1892 patients who could not be treated in their own homes were removed to two wooden huts, providing twelve beds. In that year a hospital was built at Novers Hill; though some thought its erection was unnecessary its value was speedily demonstrated. Then the Ham Green estate was purchased, and by the use made of it both for zymotic diseases and for tuberculosis the position in the city had been revolutionized. The chairman of the health committee said that the treatment of infectious diseases had been so much improved that the average stay in hospital was now shorter. It was tantamount to an increase in the number of beds, but it had been necessary to make provision for tuberculosis, and the 136 beds for the treatment of that disease were practically always full. Since 1919 the size of the estate at Ham Green had been increased from 92 acres to 330, so that it was now possible to supply all the water needed by the institution, to complete the milk supply, to provide nearly all the meat required, as well as the fresh vegetables. The extensions give the isolation hospital an additional 56 beds, bringing the total available to 190 for a population of 383,000. The principal new building is a pavilion containing four large and airy wards, the south wing being devoted to single-bed wards. A nurses' duty room and other essential accommodation is provided, and covered verandahs have been built on the south side for use in suitable weather. A new administration block has also been erected on a piece of ground facing the main road, with suitable accommodation for the staff. The cost of the scheme amounts to £36,029.

PAY BEDS IN LONDON VOLUNTARY HOSPITALS.

The special committee appointed by the Prince of Wales, President of King Edward's Hospital Fund for London, to inquire into the question of pay beds at voluntary hospitals, has begun to receive evidence. The members of the committee are Viscount Hambleden (chairman), Sir John Rose Bradford, Sir Bernard Mallet, Mr. V. Warren Low, and Professor Winifred Cullis. All communications should be addressed to the Secretary, King Edward's Hospital Fund for London, G.P.O. Box 465A, 7, Walbrook, E.C.4.

TRAFFIC FATALITIES IN LONDON.

In a recent report the Commissioner of Police for the Metropolis has noted that traffic fatalities in London during 1926 were slightly over 1,000. At an inquest on June 9th, Dr. F. J. Waldo said that it was thought that the number of motor vehicles on the road would be doubled during the next four years. Dr. Waldo appeared to think—probably correctly—that this would increase the number of deaths from accident, though not of necessity proportionately to the increase in motor vehicles. He pointed out that under the Coroners (Amendment) Act, 1926, the cost of inquests would be doubled. It would be illegal to sit without a jury in all road and air accidents. Moreover, Dr. Waldo made it a rule to order *post-mortem* examination in all road accidents, in view of possible claims for compensation. The average cost of an inquest in London at present was £5. At present the number of ambulance stations in London is thirteen. He thought others should be established.

CENTRAL MIDWIVES BOARD.

The Central Midwives Board for England and Wales held a penal session, followed by an ordinary monthly meeting, on June 2nd, when Sir Francis Champneys presided. The standing committee dealt with a further letter from the county medical officer of health for Durham (see BRITISH MEDICAL JOURNAL, May 21st, p. 934) respecting the resolutions of the Board at its last meeting in connexion with the question of the suspension and disinfection of midwives attending infectious cases. The medical officer of health asked for further information, and the Board agreed to reply:

1. That under rule F.1 a midwife must be suspended from practice when necessary for preventing the spread of infection and that, in the Board's opinion, the local supervising authority, being the body which is conversant with the facts of each particular case, is the proper body to decide when suspension is necessary.
2. That under Rule E.6 a midwife liable to be a source of infection cannot attend another maternity patient unless she has been disinfected to the satisfaction of the local supervising authority (unless the local supervising authority relieves her from that obligation), and that, in the opinion of the Board, the local supervising authority is the proper body to prescribe the manner in which it shall be satisfied that adequate disinfection has taken place.
3. That the spread of infection should not be risked merely because midwives may suffer through suspension from practice. The local supervising authority should compensate any midwives who suffer through such suspension.

In reply to Dr. Statham of the Royal Infirmary, Bristol, on the subject of vaginal examinations, it was agreed to inform Dr. Statham:

That the Board considers that the question of vaginal examinations has two aspects, (*a*) that of practice, (*b*) that of training. It agrees that as regards (*a*) unnecessary vaginal examinations are to be avoided and that this should be embodied in teaching, but as regards (*b*) it is not safe that those who undertake the conduct of confinements should be unfamiliar with the method, or deprived of the knowledge which in many cases can only be gained by internal examinations. The progress of a labour can only be observed by the changing conditions ascertained by more than one examination. The Board notes that in the extern department vaginal examinations are regularly practised.

The honorary secretary of the Wiltshire Branch of the British Medical Association had forwarded the following resolution:

> That this meeting approves of ante-natal examination, and is anxious that any movement to encourage it should be supported in every way, but is of opinion that more harm than good will be done if an attempt is made to carry out the work in the manner suggested by the form issued by the Central Midwives Board for use by midwives.

A copy of a form approved by the Medical Advisory Committee of the Branch, which it considers sufficient for the purpose, was enclosed. It was agreed to reply:

That in the opinion of the Board the training prescribed by the Board's rules will give midwives the knowledge necessary to keep the notes of their ante-natal visits which are indicated in the form approved by the Board. The Board appreciates the fact that there are in practice some midwives who may not at present be able to keep all the notes prescribed, but it is hoped that any such midwives will receive instruction in the matters in regard to which at present they lack sufficient knowledge.

The best thanks of the Board were accorded to Dr. S. G. Lukes on his retirement, for his services as examiner.

Scotland.

THE LISTER CENTENARY CELEBRATIONS IN GLASGOW.

WE have received a reprint from the *Glasgow Medical Journal* of the report of the proceedings in honour and memory of Lord Lister, which were recorded at the time in our issue of April 9th with considerable fullness. Perhaps the most interesting feature of that celebration which strikes us as we look over the pages of this reprint is the number of surviving pupils of Lister who took part in the commemoration. In particular the Clan Cameron mustered in great strength, Sir Hector Clare Cameron, Professor Emeritus Murdoch Cameron, and Dr. Irving H. Cameron of Toronto all made welcome contributions to the oratory of the meeting. The last named referred to Lister's two voyages across the Atlantic. On the first occasion (in 1876) he went to the international congress in Philadelphia; he was then in his fiftieth year and was still fighting for the general acceptance of the antiseptic system. His second visit was in 1897, when he went to Toronto to resign the office of President of the British Association, and to attend the annual meeting of the British Medical Association in Montreal, where he was

received with every honour as the man who had revolutionized surgery. The present occupant of Lister's professorial chair, Professor Archibald Young, proposed at the evening reception of the University a vote of thanks to the speakers, on which occasion, after touching on the religious ceremony of thanks in the cathedral church, which is so near a neighbour of the Infirmary, he laid stress on the great interest which the presence and speeches of those who had actually known and worked under Lister had for the succeeding generations of surgeons. This reprint with its illustrations, some of which were reproduced in our report, forms a pleasant souvenir of the great occasion which it commemorates.

A Border Practitioner's Reminiscences.

Local patriotism is a healthy sign in the national life, and we congratulate Selkirk on its *Book of Remembrance*,[1] in which is included so much evidence of pride in the town and in its history. In this pamphlet that veteran Dr. J. S. Muir gives, under the title "Sixty years agone," a highly interesting account of his experiences as a practitioner in the country around Selkirk. Many will sympathize with him in regretting that the horse has been superseded by the motor car, for there is a feeling of affection and sympathy between horse and rider which is necessarily absent in the relation of car and driver. Moreover, a horse may bring you safe home through a snowstorm or when you have lost your way, when the best of motor cars would be useless. We congratulate Dr. Muir on his abiding enthusiasm for the profession he adorns, and wish him many more years in the charming border town of which he writes.

Welfare of the Blind in Scotland.

The Scottish Board of Health has issued a circular of "advice to blind persons," describing the ways in which persons afflicted or threatened with blindness can now be assisted. The Board has also issued a pamphlet on the welfare of the blind for the information of "all ophthalmic surgeons, medical practitioners, hospitals, eye institutions, and nursing associations," as well as other persons or bodies likely to come into touch with blind persons. Children below 5 years of age may, if their homes are unsuitable, be cared for in a nursery school, maintenance being provided by the local authority under the Blind Persons Act, (1920). For blind persons between the ages of 5 and 18 education authorities are empowered to provide education, and, if it is given in a residential school, the local authority meets the cost of maintenance when the parents are not in a position to do so. Training is provided by education authorities at recognized centres in Edinburgh, Glasgow, Aberdeen, and Dundee. Employment after training may be found in institution workshops at Edinburgh, Glasgow, Aberdeen, Dundee, Inverness, and Paisley, while blind persons may also become enrolled in a home workers' scheme. Unemployable blind persons should be visited by a member of the staff of one of the outdoor societies, of which a list is given. Blind persons become eligible for old age pensions on reaching the age of 50 years, and a claim form may be obtained at any post-office. A residential home for aged or infirm blind women is provided by the Royal Blind Asylum and School, Edinburgh, and a home for men by the Royal Glasgow Asylum for the Blind.

Centenary of the Perth Royal Asylum.

The 100th annual report of James Murray's Royal Asylum, Perth, for the year ending March 31st, 1927, was submitted to the meeting held on June 13th. The asylum was founded by James Murray, who died in 1814. He had inherited a large fortune from a half-brother, and being unmarried, bequeathed the greater part of it "for the purpose of applying a certain part of the trust estate in the purchase of ground for, and the erection of, an asylum for the reception of lunatic persons in the said city of Perth and its neighbourhood." This design on the testator's part followed a Government inquiry instituted in 1813 to improve the terrible and notorious fate of the mentally afflicted throughout the country. James Murray, the founder, was a nephew of Andrew Marshall, whose researches at Bethlem Hospital resulted in the book on *The Morbid Anatomy of the Brain in Mania and Hydrophobia*, published in 1815, and it is probable that the founding of an asylum was directly instigated by the uncle. The asylum was opened in 1826, the architect being William Burn of Edinburgh, who also designed the first house of the Crichton Royal Institution at Dumfries. The first physician of the institution at Perth was William Malcolm, M.D., a practitioner in Perth, who acted as sole physician until 1836, when he was authorized to appoint a resident physician, Dr. Pierides. The Murray Asylum was originally built to accommodate 80 patients, but as early as 1838 additional wings were added for 60 extra patients. In 1848 the neighbouring property of Pitcullen Bank was purchased for the purpose of providing accommodation for private patients, but when the parochial patients were removed to Murthly Asylum in 1864 the Murray Asylum sold Pitcullen Bank, but only to repurchase it in 1907. The report, by Dr. W. D. Chambers, physician-superintendent, on the work of the asylum for the year 1926-27 shows that at the end of the year there were 163 patients in residence. The admissions numbered 68, an admission rate of 43 per cent. of the average population. Of the admissions 44, or 64 per cent., were on a voluntary basis. Attention is drawn to the importance of rest in bed in the open air, which is to a large extent provided by verandahs and shelters in the gardens of the institution. The use of ultra-violet radiation in the same connexion is also mentioned. Attention is drawn to the value of psychotherapy in its simpler forms of suggestion and persuasion, but it is noted that in spite of the large proportion of voluntary, and therefore presumably slight, cases among the admissions, it is rare to receive a resident patient in whose case anything so extensive as complete psychoanalysis would be helpful. With regard to discharges, 50 patients left the hospital during the year, of whom 22 were recovered, 23 relieved, and 5 not improved.

Edinburgh Scheme for Mental Defectives.

At a meeting of the Edinburgh Chamber of Commerce, on June 16th, it was stated that land at Gogarburn had been acquired for the purpose of a mental hospital, at a cost of £36,000. It was now proposed to make provision for 500 mentally defective persons immediately, and eventually for 1,000. An estimate had been obtained, and approved by the General Board of Control, for administrative buildings and stores, to cost approximately £40,000, and the next step would be to erect two wards to accommodate 100 patients. The Directors of the Chamber of Commerce expressed the view that the District Board of Control, before embarking upon expenditure of such magnitude, should bring the matter prominently to the notice of the ratepayers, who would have to bear the heavy burden which such a scheme involved.

Ireland.

Royal Medical Benevolent Fund Society.

From the report presented to the annual meeting of the Royal Medical Benevolent Fund Society of Ireland, held recently in the Royal College of Physicians, Dublin, it appears that the number of grants was eighty-one, as compared with eighty-five in the preceding year. The amount so disbursed in grants was £1,762, as compared with £1,747 in 1925-26. The average amount of grants has risen to £21 15s. 1d. The recipients of the grants comprised eight medical men, eleven orphans, and sixty-two widows. The audited balance sheet of the general fund showed an income from all sources of £1,874, as compared with £2,390 in 1925-26. Receipts from dividends and interest are down by £41, and the income tax refund was less by £13 14s. 3d. Under the head of donations and bequests there was a falling off of £221 10s. Subscriptions paid through the central treasurer, although there was a small increase in the number of individual subscribers, fell off by £21, due to smaller receipts from

[1] *The Book of Remembrance*, Selkirk, 1927. (7½ × 9½, pp. 57; illustrated.)

hospital collections, while those paid through branch treasurers were less than in the preceding year by nearly £20. On the other hand, receipts through the British Medical Association amounted to £106 10s. 6d., against £54 4s. 0d., an increase of £52 6s. 6d. This sum of £106 10s. 6d. is made up of subscriptions collected through the Association, £30 5s. 6d.; grant from the Association's Charities Fund, £50; and from the Medical Insurance Agency £26 5s. 0d. For these contributions the committee expressed its gratitude. Once again the Irish Medical Association gave £10, and the Dublin Clinical Club £5 5s. The committee entered the year with a carry-forward of £1,114, and it closed it with a balance to next account of £1,248. It is thus living within its income, but the falling off in the amount received from investments and in subscriptions affords cause for anxiety. At the beginning of the year the Osborne Fund was still in debt to the general fund to the amount of £4 9s. 2d. This debt has been wiped out, and the balance to the credit of the fund in the general balance sheet is £86 14s. 0d. No grants have been charged against this fund, but the committee will have to consider the question of renewing such charges during the current year. The committee, while thanking the subscribers for their support, asks each member to aid by canvassing for subscriptions and pressing the claims of the fund as opportunity may offer. The grants, small though they may be, mean a great deal to the recipients. With the money available the committee does what it can to aid the needy members of its own calling, and to help the widows and orphans of its professional brethren. There is no other fund in Ireland directly concerned with this work, and the apathy of the many medical men who contribute nothing to its support is deplored.

CONFERENCE OF THE INSTITUTE OF CLEANSING SUPERINTENDENTS.

The annual conference of the Institute of Cleansing Superintendents, held during the past week in the Mansion House, Dublin, was attended by many delegates from English and Scottish cities. Mr. James Jackson, O.B.E., salvage superintendent, Birmingham, was installed president for the third year in succession. President Cosgrave welcomed the conference to Dublin, and in the course of his address said that the people of Ireland had come closer to the realization of the fact that prevention of disease was in effect a national insurance, and that it led to a diminution in the sum total of physical suffering and to the prolongation of life. He also referred to the death rate in Dublin fifteen years ago, which, he said, was one of the highest at that time in Western Europe. Within the last four years the reduction was something like two per thousand. Dr. R. P. McDonnell, F.R.C.S.I., Deputy Chief Medical Adviser, Department of Local Government and Public Health, Ireland, read a paper in which he observed that the necessity for public cleansing did not exist in the rural communities, as farmers could always be relied on to find a suitable means of disposing of the domestic and stable refuse. In the urban areas communal action was needed to secure for the citizen conditions that would not react to the detriment of his health or comfort. The establishment of a well organized cleansing department was, therefore, the first duty of every urban authority. To the public health service the officials of the cleansing staffs were indispensable; without them they would be powerless to carry on the fight, and many of the triumphs of modern sanitation owed much to the help they had given. The prompt and efficient removal from the thoroughfares of the germ-laden contents of refuse bins was a factor in the modern crusade against epidemic disease. Dr. McDonnell went on to deal with dry closets and ashpits, and said that unfortunately they were still to be found in the small towns and villages. The people had but the most elementary ideas of the laws of hygiene, and it was regrettable that hygiene did not find a place in the curriculum of the schools. Ashpits, he was glad to say, had virtually disappeared from Dublin; but they were still to be found in almost every town and village in the country. The whole method of dust and refuse removal called for improvement. The extermination of the fly should be the aim of the cleansing superintendent.

Correspondence.

TRAUMA AS A CAUSE OF AURICULAR FIBRILLATION.

SIR,—With reference to Dr. Harris's letter of May 28th, it is clear that since April 30th he has made a definite advance in his conception of auricular fibrillation. He no longer maintains that "there has not been one shred of dependable evidence produced which would suggest that trauma may induce fibrillation in a healthy heart"; for he now quotes Sir Thomas Lewis's statement—that fibrillation, started in a healthy heart by means of electric stimuli, may persist even for thirty to sixty minutes after the stimulus has ceased. It almost looks as if we shall soon be in entire agreement.

Perhaps I was wrong in suggesting that Dr. Harris held that "fibrillation in itself was evidence of myocardial damage." He vigorously denies the soft impeachment, but surely he gave me every reason for concluding that such was his view, since on April 30th he wrote: "wherever we find auricular fibrillation there we also find a damaged heart," and also, "in order to induce fibrillation it is essential that the heart must be damaged beforehand." I fail to see in what way I have misrepresented him.

Dr. Harris affirms that the important question from the medico-legal or practical point of view is whether trauma can or cannot induce fibrillation in a *healthy* heart. This is not correct. What is really of moment from the medico-legal aspect is whether trauma may not prove the exciting or determining factor in the production of fibrillation in any heart—pathological or otherwise. Whether trauma can induce fibrillation in a *healthy* heart is of scientific interest only. It is satisfactory to note that Dr. Harris acknowledges the possibility of fibrillation in such a heart, and—of still more significance—admits that fibrillation, once begun in a healthy heart, may persist after the cessation of the exciting stimulus.

His only difficulty now is in accepting our opinion as to the integrity of the hearts of the four patients whom we class as "apparently normal so far as can be determined by ordinary clinical methods." This phrase appears to be distasteful to him—he calls it "meaningless." But a man is in truth more bold than wise who will guarantee the integrity of any individual, from skin to core.

After carefully reading Dr. Harris's letters one is led to infer that he has arrived at his conclusions by the process of disregarding both the subjective evidence of the patients and the clinical findings advanced by us in our initial communication and subsequent correspondence.

I think he will agree that the following fairly represents his conclusions, up to date, in regard to our cases: First, their hearts were diseased; secondly, in any event, we are not justified in assuming any causal relationship between the trauma and the fibrillation; and thirdly, the fibrillation was probably present before the trauma.

In fact, the above only lacks one further contention—"the finishing touch"—that the patients never fibrillated at all.—I am, etc.,

Liverpool, May 31st. JOHN HAY.

AURICULAR FIBRILLATION.

SIR,—With reference to Dr. Milner Moore's "personal experience" (BRITISH MEDICAL JOURNAL, June 11th, p. 1083) is it not in keeping with familiar experience that, clinically, there are two types of delirium cordis, *alias* auricular fibrillation—the one benign, the other malign? The former unimportant, as being relatively innocent; the latter important, because it tends to develop circulatory failure, its malignity in exact proportion to the degree of this tendency. As to the former, let me quote Sir James Mackenzie (*Diseases of the Heart*, fourth edition, p. 202): "I have already said that there are a great many individuals with fibrillation who lead useful energetic lives and whose capacity for work is little, if at all, impaired by the new rhythm."

It is interesting here to learn that in 1912 Dr. Moore consulted Sir James, who "at first did not recognize the

disease" (though it should have given a typical sphygmogram with the polygraph, if the finger could detect a delirium cordis), but finally decided that the complaint before him was auricular fibrillation—and this on the strength of the electro-cardiograms obtained. The pronouncement leaves us in the dark as to the type of the disorder, harmful or innocent, but I incline rather to infer that the diagnosis arrived at was of the more definite (serious) malady. This was in 1912, and the special interest attaching to the date is that by 1924 we know that Sir James had changed his opinion concerning the serviceableness of the electro-cardiograph, which by then he had found to be of "little or no help" in his investigations into "the functional capacity of the heart or heart failure" (BRITISH MEDICAL JOURNAL, January 19th, 1924, p. 105). This adverse opinion he does not hesitate to accentuate in the fourth edition of his book (1925, p. 428): "Already the history of the electro-cardiogram, brief as it is, shows how vain and futile have been many of the interpretations of the records taken from the human heart." Yet surely the physician's essential quest is the presence or absence of heart failure, whether in actual being or in the approach; for what have we, as practical therapeutists, to do with mere abnormality, manifesting itself only as a freakish behaviour, which does not impair functional capacity? In the opinion of Sir James Mackenzie, then, the electro-cardiograph will be useless for the purpose of differentiating between the two types of auricular fibrillation.

It remains to ask whether, failing the electro-cardiograph, the polygraph will serve our purpose. As to this, I would say that I have published my reasons in full for believing that the present interpretations of the polygraphic tracings are incorrect and, if so, the conclusions also which have been drawn therefrom. For the present, then, we must fall back upon the older methods of clinical investigation and seek from symptoms and signs to gauge the capacity of the heart to meet the demands which are being presented by the circulation of the blood in each particular case. This may seem rather dull, but should it be? Are the potentialities of symptoms and signs exhausted? Is the Hippocratic method to be shelved finally? Nay, rather, is it not certain that, in the investigation of any and every new line of research, the final court of appeal will always be the Hippocratic *argumentum ad Aegrum*, whence we shall look for the verdict "*bonum*" or "*malum*" as the case may be?—I am, etc.,

London, W.1, June 11th. HARRINGTON SAINSBURY.

DRUGS FOR SLEEPLESSNESS.

SIR,—No one with first-hand knowledge of the prevalent practice in the treatment of sleeplessness can, I imagine, be surprised that Sir Maurice Craig has promptly subjected Sir William Willcox's views to criticism in the light of his own experience. But there is more involved than comparison of results obtained under two different methods of inquiry. There are the further questions, first, how to estimate the clinical significance of defective sleep, especially in the early stages of mental breakdown (whether sleeplessness is regarded as cause or symptom is a matter of indifference in the present discussion); and, secondly, what place should be given to the prompt use of hypnotics?

If sleeplessness is looked on as a matter of primary importance it is likely that its treatment will be regarded in a much more serious light than appears to be customary. Sir Maurice Craig claims freedom, and the curious thing is that this claim has always had to be made in the case of hypnotics. Every hypnotic has been "scientifically" condemned, and the condemnation has always been accompanied by a certain suggestion that the prescriber as well as the patient is, or is likely to become, an odious person. Whisky—the night-cap—is probably the most widely used hypnotic in this country, and yet every doctor's library contains volumes on the evil effects of alcohol on the human system and the social order. The fact remains, however, that popular opinion, including the non-vocal but convincing testimony of personal habit, even among medical men, remains unaffected by scientific opinion, by teetotal clamour, and by high taxation, and most people accept the lines of Robert Burns as the proper conclusion of the whole matter:

> "Freedom and whisky gang together,
> Take aff your dram."

But why this freedom? The answer is quite unambiguous. It is in order to ask "the medical profession to treat defective sleep far more seriously than has been the custom in the past." Sir Maurice Craig, it seems to me, is justified in his effort to clarify the true issue, and in doing so he has some right to claim to put his personal experience before the profession, not merely—nor even chiefly—as testimony to the value of the drugs more immediately under notice, but to point to the serious nature of the maladies in the treatment of which he has found them useful, and to warn the profession of the danger of neglect, through unfounded fears, of measures for their prompt and efficient treatment. The practical object he has in view is to assist in reaching an adequate appreciation of the values that properly belong to the practical, as well as the theoretical aspects of the subject.

When one considers the number of disastrous incidents which constantly come to light, mostly traceable to failure to attach adequate clinical significance to defective sleep, or to use efficient remedies for it, one welcomes an attempt to awaken interest in the subject.

The sole object of this letter is to endeavour to fix attention on what I conceive to be Sir Maurice Craig's intention, and although my personal experience has run on somewhat different lines, I cordially place myself by his side in the general point of view he has presented.—I am, etc.,

London, W.1, June 19th. JOHN CARSWELL.

SIR,—I must apologize for further trespassing on your valuable space, but feel that a reply is needed to the letter of Sir Maurice Craig in your last issue.

It contains the astonishing statement that he is fully in agreement as regards the toxicity of sulphonal and trional, but apparently the toxicity of the barbitone group of drugs is disputed.

There is overwhelming evidence that on human beings the barbitone group of drugs are, weight for weight, much more toxic than the sulphonal groups. The Registrar-General's returns for England and Wales show for the twenty years 1906-25 inclusive a total number of 253 deaths from the barbitone group of drugs, while the total number of deaths from poisons of the sulphonal group is only 53 for the same period.

The British Pharmacopoeia Committee of the General Medical Council, after careful deliberation, gave in the last edition of their work a maximum dosage of 10 grains for barbitone and 30 grains for sulphonal, figures which to my mind give an approximate idea of the relatively higher toxicity of veronal as compared with sulphonal. All authorities are agreed as to the still greater toxicity of other higher barbitone compounds, such as luminal, dial, allonal.

I have on several occasions seen dangerous coma result from 50 grains of veronal, which may be regarded as an average fatal dose. In 1913 I read at the International Congress of Medicine in London what I believe was the first paper published in this country on "Veronal poisoning," and since that time have given the subject my closest attention, and have had a very extensive clinical as well as toxicological experience of the use of the barbitone group of drugs.

I have not the slightest doubt that the barbitone group of drugs possess potent toxic properties on man, and I beg of the medical profession to exercise great care and caution in the prescription of these drugs.

Sir Maurice Craig asks: "Where are the addicts, and what are they doing?" My answer is that many of them are dead and buried, as the result of fatal veronal poisoning and suicide from other causes. It is something more than a coincidence that in a large proportion of the veronal fatalities there has been to my personal knowledge definite evidence of previous addiction to the drug.

I have met with a number of persons suffering from veronal addiction in my own practice, and many of my

medical friends with whom I have discussed the subject have had a similar experience. The subjects of addiction to this group of drugs are often brain-workers and people of high intellectual grade. In addition, I have very strong grounds for believing that veronal addiction, like other forms of drug addiction, is relatively common amongst the pleasure-seeking class of the night-club type.

I have on several occasions seen dangerous nervous symptoms, such as ataxy, anarthria, diplopia, etc., result from the daily use of the drug in therapeutic doses. Some of these cases were quoted in my paper, and others have observed many similar cases.

I am fully aware that persons suffering from active mental disease can often tolerate large doses of hypnotic drugs over relatively long periods, and that it may be necessary and advisable in such cases to use the barbitone group of drugs daily over long periods, provided that the patient is under close medical observation. This may explain the wide discrepancy between the experience of Sir Maurice Craig and myself.

I stated in my recent paper (which unfortunately Sir Maurice Craig has not read) that

> the barbituric acid compounds "are rapidly acting and fairly certain hypnotics. It is for this reason that they are so commonly used. A single therapeutic dose is usually followed by a satisfactory period of natural sleep, and no marked after-effects follow when the therapeutic action has passed away, which should be after six to twelve hours."

The view that these drugs may be given in therapeutic doses daily over long periods to persons who are not suffering from active mental disease is, in my judgement and experience, most dangerous and misleading teaching.—I am, etc.,

London, W.1, June 20th. W. H. WILLCOX.

MINERS' NYSTAGMUS.

SIR,—Appearance of the articles dealing with miners' nystagmus in your issue of June 18th prompts me to send you the following paragraph taken from some notes (already in print) based on observations made by me during a short visit in the early part of this year to the United States:

> "*Miners' Nystagmus.*—Opportunity was seized while at Pittsburg of gaining acquaintance with the coal-mining industry. Here, also, more medical services are provided than in this country; but the most striking difference in underground practice is the illumination provided. There was no need for waiting on leaving the cage to 'get your eyes'; the walls of the workings were white, and reflected the light from the lamps, stone dusting being always done with limestone or gypsum. The electric safety lamps used gave more light than ours, and were different in shape, being worn in the cap with the battery attached to the waist. This is the position which of old the miner chose for his naked candle, and still chooses in naked-light pits. No further reason need be sought for the entire absence of nystagmus among American coal-miners. One miner said that he and his son while mining in Yorkshire had suffered with eye movements, but that both had lost their troubles within two months of taking up mining work in America."

—I am, etc.,

Cardiff, June 18th. EDGAR L. COLLIS, Member of Miners' Nystagmus Committee.

SIR,—I wish cordially to support the plea of Dr. Freeland Fergus in the JOURNAL of June 18th (p. 1092) for a thorough investigation of miners' nystagmus. There seems no other disease in which is to be found such a tangle of contradictory observations and beliefs. Even the official definition contradicts the term it should define: "The disease known as miners' nystagmus, whether occurring in miners or others and whether the symptom of oscillation of the eyeballs be present or not." The consensus of ophthalmological opinion is that bad illumination is the cause of the trouble, but Dr. Fergus shows that improved illumination is often followed by the onset of symptoms.

Dr. Robson in his article says ". . . the pathological entity round which this complex revolves is involuntary oscillation of eyeballs." Dr. Fergus writes on the previous page: "cardiac instability is much more frequently present than rotation of the eyeballs." Dr. Robson adds to the confusion when he notes that "subjective symptoms without objective signs may be the chief determining characteristic."

The absence of *post-mortem* examinations is a startling revelation: yet material has been provided by suicides ascribed to this mysterious disease. It appears from these articles that research hitherto carried on has been worse than useless, and that the only course is to scrap all our present beliefs, disregard all previous observations, and start afresh.—I am, etc.,

Southsea, June 21st. W. S. INMAN.

PALATE OPERATIONS.

SIR,—Sir Robert Woods, in your issue of February 26th, writes an interesting note on aids to palatal sufficiency after cleft palate operations, but he twice makes the statement that a cleft palate operation may be quite "good" and "successful" and yet leave a "hiatus behind the palate" either "literally huge" or "so great as to look quite hopeless." It is difficult to reconcile the two portions of the statements—for how can any operation be deemed to be successful if its primary object is not attained? As I have pointed out (*Der Wolfsrachen und Seine Behandlung*, 1913, *Stomatology*, 1912 and 1924, *Facial Surgery*, 1924), the primary object of any cleft palate treatment is to enable the posterior margin of the soft palate to approximate to the posterior pharyngeal wall; it is infinitely more important to attain this than to close the cleft in the palate.

Some of my patients who have fully functional soft palates after operation, but in whom, for one reason or another, I have not touched the cleft in the hard palate, speak, even without a plate, with most extraordinary distinctness. Anyone can "close" any cleft by utilizing all the available tissue in a lateral direction at the expense of the antero-posterior direction—at least the "hole in the palate" looks closed to the parents and friends; but it is not closed, it is merely *transferred* from the palate to the oropharynx. This mere transference of the cleft from one position to another is brought about too often, I think, by the rigid adherence to the Langenbeck operation. The antero-posterior measurement from the hard palate to the pharynx differs considerably in different patients. When it is not long and there is sufficient tissue, the Langenbeck is a perfectly good operation; where, however, it is longer than usual, and/or the tissue available is less than normal, then the Langenbeck operation gives bad results, a short or a rigid soft palate inevitably resulting, with consequent loss of function. In the latter type of case either a "bar-velum" operation only should be done—with subsequent provision of a hinged artificial palate—or a skin-grafted flap operation. In very wide clefts, in order to avoid using up too much tissue in a lateral direction, a preliminary partial Brophy operation is also often a necessity, the indication being that the lower jaw fits up inside the upper jaw. Used with discrimination, I have never seen other than the most beneficial effects follow this operation. In any case there should be no tension; tension and function in any plastic operation are incompatible. I agree that the treatment of these short and functionless palates (after unsuccessful operation) is very difficult.

The paraffin wax injection suggested by Sir Robert Woods might help considerably, I should imagine, if it does not interfere with the function of the superior constrictor of the pharynx. I have usually contented myself with lengthening the palate by flaps from the pillars of the fauces or by having a solid obturator made, attached to an extension from a dental plate, on to which the superior constrictor may close, and I must say that I think the latter plan gives the better functional speech result. In planning any cleft palate operation I usually tell students that they should choose that form which will best please the child in ten years' time, not that which will best please the parents at the moment.—I am, etc.,

University of Otago, April 27th. H. P. PICKERILL.

THE SCHICK TEST.

SIR,—A ward maid at the Croydon Hospital, at the time Schick-negative and quite well, was found on taking a swab to have in her throat virulent diphtheria germs, which killed a guinea-pig in thirty-six hours.

It would appear that we must look for the dangerous carrier amongst the Schick-negative persons. The Schick-positive are not so dangerous, as if infected their sore throats at once betray them.—I am, etc.,

G. GILBERT GENGE, M.D.,
June 7th. Physician, Croydon General Hospital.

INTRATRACHEAL INJECTION OF IODIZED OILS.

SIR,—The estimation of the dangers of introducing iodized oil into the trachea and bronchi by Drs. Archibald of Montreal and A. L. Brown of San Francisco (BRITISH MEDICAL JOURNAL, June 4th, p. 1023) may serve as a warning against the adoption of this means of examination without the consideration of the dangers which may arise.

The selection of suitable cases will rest with the physician and will exclude cases of pulmonary tuberculosis in which there is haemorrhage or pyrexia, and all suppurative cases in which there is fever. When absolutely necessary, however, such cases might be examined by the introduction of lipiodol diluted to half strength by means of almond or pea-nut oil; the risk of the injection causing untoward symptoms would be considerably lessened and the intensity of the radiographic shadow not seriously decreased.

For some time I have adopted the radiological methods elaborated by Dr. J. V. Sparks and communicated by him to the Röntgen Society in April, 1927. The injection of the iodized oils is controlled by means of fluoroscopy before the radiograms are taken. The screening must include the site of the introduction of oil, more especially if the intercricothyroid route be selected. The injection completed and the exposures made, some minutes are allowed to elapse, during which time the patient should, if possible, sit up. A screen examination of the oesophagus and the stomach should then be made, and the detection of any trace of the iodized oil in these organs should be an indication for immediate lavage.

The introduction of iodized oil into the trachea and bronchi is an excellent diagnostic procedure in selected cases, and I think that the slight risks which undoubtedly exist can be considerably minimized by the closest co-operation between the physician and the radiologist, and more particularly by the technique of the latter; in no examination is more skill required, and the actual taking of the films is a part, and the less important part, of the problem before him.—I am, etc.,

E. J. H. ROTH, M.R.C.S., L.R.C.P.,
D.M.R.E.Camb., Chief Assistant in the *X*-ray
London W.1, June 6th. Department, St. Bartholomew's Hospital.

INFLUENZA AND ALBUMINURIA OF PREGNANCY.

SIR,—The universal opinion that acute nephritis is caused by a toxin may possibly fall as a result of Dr. Ambrose Owen's admission that compression of the kidney is or may be a determinant of albuminuria. That such a causal nexus exists in influenza—in spite of the cough, which when persistent wracks the patient, and, as the manometer shows even in the normal, causes such a rise of intra-abdominal pressure and must do so more than ever in pregnancy—he will not allow. In influenza a toxin is at work: compression of the kidneys is not "*the* cause of albuminuria in the cases under consideration." The deduction, vitally important, is that in other cases it may be.

It seems at the moment impossible to explain acute nephritis. One of the first questions to answer is: What is the relationship, if any, between "albuminuria" and "acute nephritis"? The attribution of the latter to a toxin—it matters not which sort—is easy and satisfies most. How curious to note that in scarlet fever acute nephritis usually occurs many days after the specific toxaemia has disappeared; and that in many cases of nephritis no antecedent infection can be traced. We are not yet conversant with all the forces of the body which conjointly maintain health, or which, departing for the moment in some respect or other from the normal, either as a result of environmental change or of change arising within, determine a pathological phenomenon of magnitude. We have a long way to go yet before we understand the cause even of elementary and insignificant deviations from normal.—I am, etc.,

Rugby, May 23th. R. H. PARAMORE, F.R.C.S.Eng.

TREATMENT OF HALLUX RIGIDUS.

SIR,—Mr. Cochrane's view that the functional end-result of treatment of hallux rigidus is in a large number of cases unsatisfactory (June 18th, p. 1095) is widely accepted by those who take the trouble to observe their end-results. His endeavour to supplement the measures available by the introduction of a capsulotomy is praiseworthy, but the value of an otherwise excellent article is reduced by the indefinite account of the indications and limitations of the operation. We cannot regard his procedure as "an effective substitute" for other operations.

It has long been my belief that one of the causes of failure in the treatment of hallux rigidus is the very generally accepted view that it is, in itself, a clinical entity. It is not. It is merely an expression of metatarsophalangeal arthritis, which, like arthritis elsewhere, may be due to any one of a score of causes. To attempt to treat such a group of diseases by a single routine bone operation is as intelligent as to attempt to treat every arthritis of the knee by excision of the joint.

It is my custom to classify arthritis here, as elsewhere, into traumatic, "degenerative," and infective types. The traumatic arthritis is almost invariably due to the stubbing of the great toe by a short boot. Spasm of the short flexor muscles results, contracture of the ligaments and capsule follows, and finally bone changes may occur. In the earliest stage of muscle spasm a bone operation is an improper procedure, and no more is necessary than to protect the joint from further injury. But it must be insisted that the common practice of applying a metatarsal bar to the very boot which is causing the condition does not constitute protection. The first essential is not a bar, but a boot of correct length, and the correct size of boot can only be determined by measuring the feet with a bootmaker's measure-stick, which is as essential to an orthopaedic surgeon as a stethoscope to a physician. In my hospital orthopaedic clinics measurement of feet and boots is a routine procedure, and very interesting and instructive facts are to be elicited. One frequently finds patients—especially children and women—wearing boots one or two sizes too small. When the correct size of boot is worn (three sizes larger than the number indicated on the measure-stick) all symptoms disappear. It is very common to find patients with feet of unequal length, with a unilateral hallux rigidus affecting the longer foot. Measurements show that, although the boots are the correct size for the shorter foot, they are too small for the longer foot.

The second stage of the traumatic type of hallux rigidus, where capsular contracture is commencing, may respond to manipulation under anaesthesia, followed by protection as above. But, as would be expected by analogy with other joints, there is a later stage of capsular contraction where manipulation is ineffectual and an open operation is demanded. It is here that Mr. Cochrane's procedure will find its scope. I have on several occasions practised a similar operation in this type of case, but before actually dividing the capsule I have performed a muscle slide of the short flexor muscles, similar in principle to the operations of Steindler for claw-foot, Souttar for paralytic flexion of the hip, and Max Page for Volkmann's contracture. After operation the toe is put up, usually in plaster, in the corrected position, and movements are instituted in a few days. The result of a muscle slide should be more permanent than that of a simple tenotomy. The results have been satisfactory when the cases have been judiciously selected. My present routine is to attempt manipulation and protection first, and to go on to muscle slide and capsulotomy later, if palliative treatment should fail.

In the final stage, where the pathological changes have gone on from capsular contraction to cartilaginous erosion

and osteophyte formation, a bone operation is clearly indicated, whether it take the form of Mayo's operation, Kellar's operation, or a modified procedure. I have usually found that complete correction can be obtained without capsulotomy, if a bone operation is performed.

Other types of traumatic arthritis include the arthritis following fractures of the metatarsal head, base of the phalanx, and sesamoids; there is the type associated with flat-foot which, as a result of irritation of the tarsal joints, has been complicated by muscle spasm, most evident in the peronei, but also present in other muscles of the foot and toes. There is, moreover, the degenerative form of true osteo-arthritis of the joint, and many types of infective arthritis may occur in which the prominent physical sign is rigidity of the great toe. One has seen gouty, tuberculous, and gonococcal "hallux rigidus." The term "tonsil foot" has been applied to the hallux rigidus of young adults which is secondary to distant foci of infection, and every surgeon knows the resistant rigidity of the great toe which may arise in rheumatoid arthritis. There can be no routine treatment for all these affections—appropriate forms of therapy are to be adopted as elsewhere in the body.

In conclusion I would reiterate that rigidity of the great toe is merely a physical sign of arthritis, and that there are many forms of arthritis, each demanding its specific treatment. Arthritis of this joint should not be regarded as a peculiar and isolated condition, but treatment should be governed by the principles which apply elsewhere. In so far as Mr. Cochrane's article stimulates this view, by the application of a well known operation to the particular joint in question, I welcome it.—I am, etc.,

R. WATSON JONES, B.Sc., M.Ch.Orth., F.R.C.S.Eng.,
Honorary Assistant Surgeon, Orthopaedic Department, Liverpool Royal Infirmary.

June 19th.

MEDICAL MEN IN PARLIAMENT.

SIR,—Dr. Vernon Davies's argument that membership of Parliament should be a full-time job would, if pushed to its logical conclusion, restrict entry to Parliament to professional politicians. If politics is to be a profession, training for it should, as in any other profession, begin early, and the amateur politician, coming into politics from other occupations, who constitutes nine-tenths of the present House, would vanish. The professional politician has never been looked upon with too much favour in this country, and a House consisting entirely of professional politicians seems to me a nightmare. But Dr. Davies really supports the main argument of my address when he states, quite accurately, that members who have interests and occupations outside Parliament form the large majority of the House. All that I contended was that in the clash of sectional interests which make up the House as at present constituted, medicine is very inadequately represented. Of course, medical men entering Parliament must be prepared to make large sacrifices both of time and money, as I sufficiently stressed in my address, but that a very abundant measure of professional practice can be combined with parliamentary work has been demonstrated very fully by the numerous eminent lawyers who adorn the House. Dr. Davies's argument that a man retired from practice can reflect medical opinion equally well with those in active work will not, I think, convince anyone; he is obviously himself only half-hearted in advancing it. May I in a small personal explanation say that my conception of my duties has *not* been to restrict my participation in parliamentary work to the "safeguarding of the interests of my University," although these are naturally of paramount importance to me, but I have considered myself as in some degree representing medicine as well, and have, where possible, taken a share in defending its interests. The House is rightly intolerant of men butting in on subjects of which they know little, and I have confined myself in debate to educational and medical subjects on the whole.

In answer to Dr. Nathan Raw's courteous note, I may point out that your summary of my address—excellent as that summary was—was necessarily somewhat truncated, and that I had no intention of conveying the impression that our present committee was the first of its kind. But in the new Parliament of 1924 the medical members were probably more split up into parties than was the case in 1918, and in 1924 serious doubts were expressed as to whether it would be possible to sink party differences upon professional matters, and whether it would be in fact desirable to reconstruct the committee under the then conditions. Experience has shown that this was entirely feasible, and the committee has been extremely active throughout the present Parliament.—I am, etc.,

E. GRAHAM LITTLE.

House of Commons, June 20th.

THE FAMILY DOCTOR.

SIR,—Eloquent idealism and practical suggestiveness will attract attention to the lecture by Dr. C. E. Douglas, published in your issue of June 18th (p. 1120). That the mainspring of general practice is ethics, not cash, is, at least as sound philosophy as that of Romeo's apothecary, and few will maintain that the authors of the National Health Insurance system had the greatness of mind to appreciate this sober fact. Dr. Douglas breathes a prayer that it may some day be possible to hark back to the fundamental truth, that the doctor's work is the treatment of disease and nothing else. May I venture to place this pious wish in conjunction with a quotation from the report of the Royal Commissioners. "The ultimate solution," they think, "will lie in the direction of divorcing the medical service entirely from the insurance system."[1] Were this divorce accompanied by (1) restriction of the State medical service to the genuinely necessitous poor, and (2) a system of insurance against the *financial* risks of sickness, it would remove from general practice the greatest of the deteriorating influences which Dr. Douglas sees in his vision of the present, and help enormously to clear the way from the glories of the past to the achievements of the future.—I am, etc.,

ROBERT CARSWELL.

Wandsworth, S.W., June 20th.

SIR,—I would, as a panel doctor who has worked under the insurance since its inception, like to register a protest against Dr. Douglas's statements about insurance practitioners. If he is a panel doctor he, of course, knows best the type of work he does. If he is not a panel doctor I cannot congratulate him on his good taste. Every inquiry that has been made into the working of the Act has been eloquent on the excellence of the doctors' work.

When I think of the old club system from which we have escaped I feel emancipated, not degraded. My experience differs from Dr. Douglas's. I have never met any doctor who was not in medicine for what he could honestly get out of it. It may be that the Mecca of altruism lies in the East, and even in Fifeshire, but I "hae ma doots."

I cannot see that any noble and altruistic mind would hold such a poor opinion of the great majority of the rest of his fellow doctors.—I am, etc.,

JAMES COOK.

Dennistoun, June 18th.

The Services.

INDIAN MEDICAL SERVICE.

ANNUAL DINNER IN LONDON.

THE annual dinner in London of the Indian Medical Service was held on June 15th, when Major-General R. W. S. Lyons was in the chair, and ninety officers and two guests were present. At the dinner this year the chairman had on the table in front of him a gold cup of elegant pyramidal form, which had been presented by the members. It bore on its base the names of the founder and of the honorary secretaries, and of all the officers who have presided at the annual dinners since the Indian Medical Service Fund was founded in 1897, through the exertions of the late Colonel Sir Peter Freyer. At the first and second dinners the late Sir Joseph Fayrer, Bt., F.R.S., was in the chair, and his name is followed by a long and distinguished list. The dinner is an agreeable social function, when old friends meet, and for long there were no speeches.

[1] Report of the Royal Commission on National Health Insurance, para. 138, p. 65.

Recently the practice of a few speeches has crept in, but it is intended that they shall all be short. On the present occasion the toast of "The Indian Medical Service" was proposed by the chairman in a reminiscent speech, and acknowledged by Major-General T. H. Symons, C.S.I., Director of the Service, by Major-General W. H. Ogilvie, C.B., Director of Medical Services, India, and by Air Vice-Marshal D. Munro, C.B., C.I.E., who began in the I.M.S., but was not long ago transferred to the Royal Air Force Medical Service, of which he is Director-General. After speaking of the affection in which he still regarded his old Service, he concluded by proposing the toast of "The Honorary Secretaries," Colonel J. J. Pratt and Colonel John Anderson, C.I.E., who both replied briefly. The valuable services rendered by the honorary secretary in India, Lieut.-Colonel J. K. S. Fleming, were specially acknowledged. The following is a list of the officers present:

Major-Generals: Sir R. H. Charles, G.C.V.O., K.C.S.I., B. H. Deare, C.I.E., G. F. A. Harris, C.S.I., Sir P. Hehir, K.C.I.E., C.B., C.M.G., H. Hendley, C.S.I., W. H. Ogilvie, C.B., C.M.G., J. B. Smith, C.B., C.I.E., T. H. Symons, C.S.I., O.B.E. *Air Vice-Marshal:* D. Munro, C.B., C.I.E. *Colonels:* H. Ainsworth, Sir H. E. Banatvala, C.S.I., J. K. Close, J. Crimmin, V.C., C.B., C.I.E., C. M. Goodbody, C.I.E., D.S.O., J. A. Hamilton, C.M.G., A. W. M. Harvey, A. J. Macnab, C.B., C.M.G., R. A. Needham, C.I.E., D.S.O., J. J. Pratt, H. Austen Smith, C.I.E., R. G. Turner, C.M.G., D.S.O., F. Wall, C.M.G., C. N. Wimberley, C.M.G. *Lieutenant-Colonels:* J. Anderson, C.I.E., W. M. Anderson, C.I.E., F. A. Barker, O.B.E., G. T. Birdwood, J. T. Calvert, C.I.E., R. Markham Carter, C.B., A. W. Cook-Young, D. G. Crawford, J. M. Crawford, O.B.E., H. R. Duttan, R. H. Elliot, J. Entrican, C.I.E., G. H. Frost, J. Fuller-Good, H. Greany, E. V. Hugo, C.M.G., J. B. Dalzell Hunter, O.B.E., J. G. Jordan, H. C. Keates, H. Kirkpatrick, J. C. G. Kunhardt, Clayton Lane, W. B. Lane, C.I.E., C.B.E., W. T. McCowen, G. E. Malcolmson, W. A. Mearns, F. O. N. Mell, C.I.E., A. Miller, T. R. Mulroney, F. O'Kinealy, C.I.E., C.V.O., A. S. M. Peebles, V. Heathcote Roberts, Sir L. Rogers, C.I.E., F.R.S., E. R. Rost, O.B.E., F. B. Shettle, O.B.E., S. Browning Smith, C.M.G., R. Steen, T. G. N. Stokes, Ashton Street, W. A. Sykes, D.S.O., H. H. Thorburn, C.I.E., W. H. Thornhill, D. P. Warliker, H. G. L. Wortabet, A. C. Younan. *Majors:* C. H. P. Allen, F. J. Anderson, *M.C.*, L. A. P. Anderson, C. L. Bilderbeck, Sir T. J. Carey-Evans, *M.C.*, N. H. Hume, W. D. Keyworth, F. J. Kolapore, S. H. Middleton-West, *M.C.*, C. Newton-Davis, *M.C.*, M. J. Quirke, J. Scott, D.S.O., O.B.E., R. S. Townsend, *M.C.* *Captains:* E. Cotter, P. A. C. Davenport, G. R. McRobert, R. C. Malhotra, O.B.E., C. M. Nicol, S. R. Prall, T. H. Thomas, H. Williamson.

The guests were Sir Dawson Williams, C.B.E., *British Medical Journal*, and Dr. E. C. Morland, the *Lancet*.

AGE OF RETIREMENT.

A ROYAL WARRANT, dated June 10th, has been issued by the India Office amending the Warrant of June 13th, 1919, in respect of the age of retirement of I.M.S. officers holding administrative appointments. The essential clause of the new Warrant is as follows:

"Our Will and Pleasure is that General Officers shall be placed on the Retired List at the age of 60 instead of as heretofore at the age of 57. It is Our Further Will and Pleasure that the provision whereby a General Officer holding an administrative appointment may be continued in employment for not more than one year in any special case where it appears to Our Governor General in Council to be for the good of Our Service, shall be cancelled."

DEATHS IN THE SERVICES.

Colonel Edward North, C.B., Army Medical Service (ret.), died at Worthing on June 6th, aged 70. He was born at Ropley, Southampton, and was educated at St. George's; he took the L.R.C.S.Ed. in 1879, and the F.R.C.S.Ed. in 1883. He entered the army as surgeon in 1880, attained the rank of Colonel in 1906, and retired in 1910. He served in the South African war of 1900-1902, when he took part in the operations in Cape Colony, including the action of Colesberg on January 1st, 1900; in the Orange Free State, later the Orange River Colony, including the actions at Paardeberg, Poplar Grove, Dreifontein, Houtnek (Inoba Mountain), Vet River, Zand River, Bethlehem, and Wittebergen; and in the Transvaal, in the actions at Johannesburg, Pretoria, Diamond's Hill, and Elands River; was mentioned in dispatches in the *London Gazette* of April 16th, 1901, and received the Queen's medal with five clasps. After his retirement he rejoined for service in the great war (1915-17), was again mentioned in dispatches, and received the C.B. in 1917. He was unmarried.

Colonel Henry Octavius Trevor, Army Medical Service (ret.), died at Torquay on June 3rd, aged 67. He was born at Nether Stowey, Bridgwater, and was educated at St. Thomas's; he took the L.S.A. in 1880, and the M.R.C.S. in 1881. Entering the army as surgeon in 1882 he became colonel in 1911, and retired in 1917. He served in the Burmese campaign in 1885-87 (medal with clasp); in South Africa from 1899 to 1902 (Queen's medal with clasp, King's medal with two clasps); and as A.D.M.S. in the recent great war. He was a younger brother of the late Surgeon-General Sir Francis Wollaston Trevor, K.C.S.I, Army Medical Service, who died on November 16th, 1922.

Major Charles Hildred Brodribb, I.M.S. (ret.), died, after long years of illness, at Penmaenmawr, North Wales, on May 27th. He was born on October 30th, 1876, educated at St. Mary's Hospital, and graduated M.B. and B.S.Lond. in 1900; he took the M.R.C.S. and L.R.C.P.Lond. in the same year. After serving as house-physician, house-surgeon, and clinical assistant in the throat department at St. Mary's, as senior house-surgeon of Scarborough Hospital, and as house-surgeon and anaesthetic and clinical assistant at Tottenham Hospital, he entered the I.M.S. in 1903. He became major on February 28th, 1915; he was placed on the temporary non-effective (half-pay) list on account of ill health in 1922, and retired in the same year. During the war he served as surgical specialist to the 5th and 9th Divisions of the Indian Army.

Captain John Furse McMillan, R.A.M.C. (ret.), died suddenly at Sandown, Isle of Wight, on May 31st, aged 67. He was born at Southmolton, Devon, on August 24th, 1859, educated at the Middlesex Hospital, and took the M.R.C.S. and L.R.C.P.Lond. in 1882. After serving as house-physician at Middlesex Hospital, and as a surgeon in the P. and O. Company, he entered the army as surgeon on August 1st, 1885, was placed on half pay on account of ill health on September 22nd, 1894, and retired on September 22nd, 1899. He served in one of the Balkan wars as director of the hospital at Raschka, and as physician of the arrondissement of Studenitza, Serbia.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT congregations held on June 18th and 21st the following medical degrees were conferred:

M.D.—C. J. Penny.
M.CHIR.—F. W. Roques.
M.B., B.CHIR.—R. D. Alexander, E. J. Greenwood, T. S. Dewey.
M.B.—F. W. Law.

UNIVERSITY OF LEEDS.

THE Council has conferred the honorary distinction of Emeritus Professor on Sir Berkeley Moynihan, Bt., P.R.C.S., who recently retired from the Chair of Surgery.

VICTORIA UNIVERSITY OF MANCHESTER.

THE Council have accepted the resignation of Miss Muriel M. Nutt, M.A., Demonstrator in Bacteriology.

The following appointments have been made: *Lecturer in Bacteriology*: Mr. A. W. Downie, M.B., Ch.B.Aberd.; *Demonstrator in Anatomy*: Mr. J. M. Yoffey, M.B., Ch.B.Manch.

The Turner Medical Prize has been divided between Muriel M. Edwards and Josephine Walmsley.

UNIVERSITY OF DUBLIN.

THE election of three representatives to the Dail has resulted as follows: Professor William Thrift, Fellow of Trinity College, Sir James Craig, M.D., F.R.C.P.I., King's Professor of Medicine, and Professor E. A. Alton, Fellow of Trinity College. The electorate numbered 2,069; the total poll was 1,589; the "quota"—under proportional representation—was 323. There were four candidates for three seats. The result leaves the representation of the constituency precisely as it was in the last Dail.

QUEEN'S UNIVERSITY, BELFAST.

PROFESSOR R. J. JOHNSTONE, M.P., has been appointed to represent the University on the General Medical Council, vice Colonel Sinclair, C.B.

Dr. J. B. Moore, F.R.C.S.I., senior surgeon to the Mater Infirmorum Hospital, Belfast, has been co-opted a member of the Senate.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

AN extraordinary meeting of the College was held on June 14th, when Dr. A. Logan Turner, President, was in the chair.

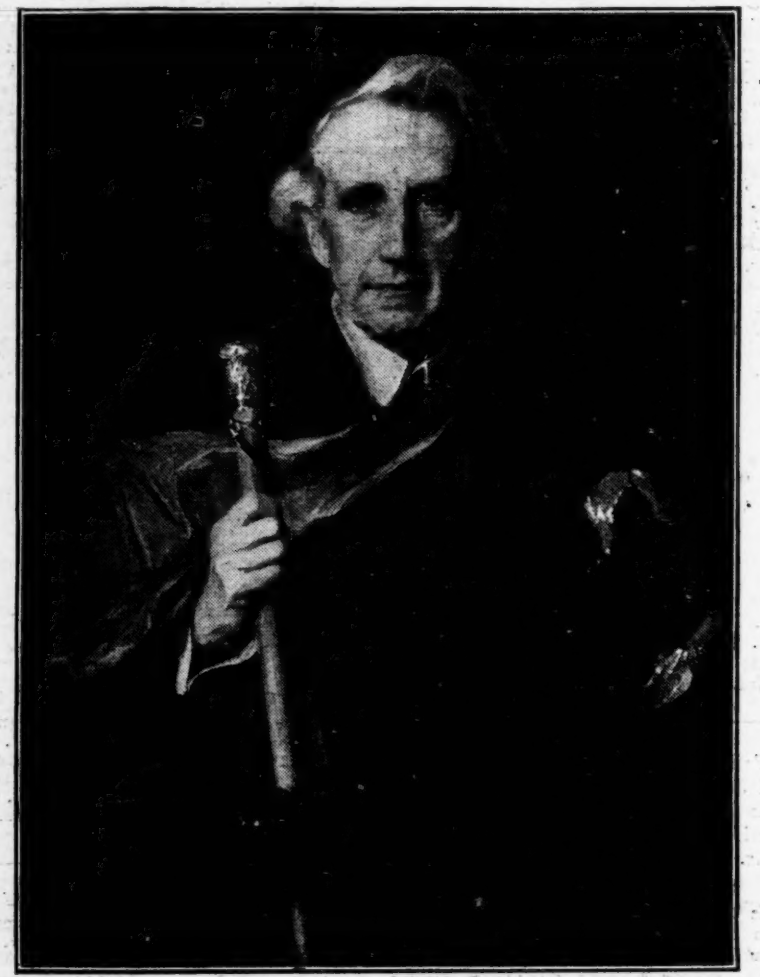
The following were elected honorary Fellows in celebration of the centenary of the birth of Lord Lister, which will be commemorated in Edinburgh during the Annual Meeting of the British Medical Association next month: The Earl of Balfour, K.G., O.M., Sir William Watson Cheyne, Bt., Professor Harvey Cushing (Boston, Mass.), Professor Tuffier (Paris), Professor John Stewart (Halifax, Nova Scotia), Sir Robert W. Philip, M.D., President-elect of the British Medical Association, Dr. George M. Robertson, President, Royal College of Physicians, Edinburgh.

Obituary.

A. H. FREELAND BARBOUR, M.A., B.Sc., M.D., F.R.C.P., LL.D.

THE death occurred on June 11th, at his residence in Edinburgh, of Dr. A. H. Freeland Barbour. Dr. Barbour's death took place with a happy absence of any suffering. He had been in ordinary health and the best of spirits, and was engaged in signing letters when he suddenly fell forward and expired.

The reputation given to the Edinburgh Medical School by the genius and personality of Sir James Y. Simpson has ever been a stimulus to his successors in the department of obstetrics and gynaecology. The names of Sir A. R. Simpson, Sir J. Halliday Croom, Dr. Brewis, Dr. Berry Hart, Dr. A. H. Freeland Barbour, Dr. Milne Murray, Dr. J. W. Ballantyne, and Dr. Haultain are all written large in the history and development of gynaecology and obstetrics. Dr. Barbour was the last survivor of this distinguished group of men who flourished together in Edinburgh for many years, and whose united labours did much to enhance the reputation of the Edinburgh Medical School. Although he had retired from active professional work for some years, Dr. Barbour continued to take a keen and active interest in all matters connected with the university and other medical institutions in Edinburgh, and he was looking forward with great interest to the meeting of the British Medical Association in Edinburgh next month. Although he had never been of very robust constitution, his many friends had every reason to hope that he would long be spared to help them by his ready support and advice. He was not only a distinguished and honoured member of the medical profession, but his death will be mourned by a very wide circle, since his interests were catholic and his friends outside the profession correspondingly large in number.



DR. A. H. FREELAND BARBOUR.
(From a portrait by P. de Laszlo.)

Dr. Barbour was the youngest son of the late G. F. Barbour of Bonskeid and Gryffe, and was born in Edinburgh, where he was educated, graduating M.A. in 1874, B.Sc. in natural science in 1877, and M.B. with honours in 1879. From this time he devoted his attention to obstetrics and gynaecology, attracted to it doubtless in large measure by his association with his brother-in-law, the late Professor A. R. Simpson, whose assistant he shortly afterwards became in succession to Dr. Berry Hart.

After studying at various clinics in Germany, France, and Italy, he threw himself whole-heartedly into the preparation, with his lifelong colleague and friend Dr. Berry Hart, of the famous *Manual of Gynaecology*, which, when first published in 1882, marked a distinct epoch in British gynaecology. In the preface the authors stated that in writing the book they had tried to keep before their eyes the great principle that the anatomy, physiology, and pathology of the pelvic organs formed the foundation of good clinical work. The want of such a textbook had been long felt, and it met with an instantaneous and well merited success; it may be said to have been the first scientific textbook in modern gynaecology, and on it many of its numerous successors were modelled. Embodying the views not only of the Edinburgh school, which the authors represented, but also those of America and the Continent, the book included a bibliography of recent literature on each subject treated, and a wealth of illustration which had hardly ever been attempted in a medical or surgical textbook. It was received among gynaecologists with acclamation, and attracted world-wide attention to the Edinburgh Medical School, which the names of Simpson, Syme, and Lister had already made famous. It ran through six editions, was translated into French, Italian, Spanish, and even Chinese, and was for many years the standard gynaecological textbook at home, in the Colonies, and in America.

In 1884 Dr. Barbour presented a thesis for the degree of M.D. on "Spinal deformity in its relation to obstetrics." This was awarded a gold medal, and was published later as a monograph with 36 lithographic plates. This work was the outcome of original investigations applied to much unused material in the medical museums of Edinburgh and elsewhere. Continuing his studies on the anatomy of labour, Barbour published, in 1889, the first edition of his *Atlas of the Anatomy of Labour, as Exhibited in Frozen Sections*. The final and much enlarged edition of this work appeared in 1896. He devoted an enormous amount of time and care to it, and it will be a lasting monument of his scientific zeal, skill, and industry. Its publication was received with the most generous appreciation both at home and on the Continent, where work on similar lines had already been done by Braune, Schroeder, and others. His latest book, *Gynaecological Diagnosis and Treatment*, was written in collaboration with his former assistant, Professor B. P. Watson, now of Columbia University, New York, and is still a popular student's manual.

In addition to these major treatises, Dr. Barbour wrote many valuable papers, which appeared from time to time in the *Transactions* of the Edinburgh Obstetrical Society and other periodical publications, and all bore the mark of his original and scientific mind.

As a teacher he had a long and distinguished career in Edinburgh, and no department of his work brought him greater enjoyment or called forth in him a deeper interest. He was appointed university assistant to Professor Sir A. R. Simpson in 1882, and became later an extramural lecturer on midwifery and gynaecology, worthily maintaining the high traditions of the Extramural School in his own depart-

ment. He also served a full term of office as gynaecologist to the Royal Infirmary, and as physician in the Simpson Memorial and Royal Maternity Hospital. He had a singular aptitude for clear and striking exposition of subjects upon which he spoke, and many generations of students will remember with gratitude his lucid and interesting bedside clinics. Dr. Barbour's great powers of holding the attention of his hearers were also well illustrated in the lectures he delivered from time to time to working men. These dealt with subjects such as "The body as a machine," and "The most wonderful pump in the world," and formed admirable little discourses on physiology. The *Primer of Midwifery* which he wrote for nurses displayed the same clearness of thought and exposition. On the institution of a lectureship on gynaecology in the university, when Sir A. R. Simpson retired he appointed Dr. Barbour to this post, which he held during the term of Sir Halliday Croom's professorship of midwifery. After the retiral of the latter, and before the appointment of Dr. B. P. Watson, Dr. Barbour for one year delivered the lectures to the university class both in obstetrics and gynaecology.

Dr. Barbour served a term of office as President of the Royal College of Physicians; and when he resigned his ward in the Royal Infirmary he was made honorary physician to the gynaecological department. Numerous honours from foreign institutions had come to him, and he was a corresponding Fellow of the Royal Academy of Medicine of Turin and of the Obstetrical Society of Leipzig. In 1906 the University of Toronto conferred upon him the LL.D. degree of that university.

Dr. Barbour was a man of deep religious conviction and wide and warm sympathy. He took a special interest in the students with whom he came in contact, and in the "nineties" of last century entered enthusiastically into the work which was carried out for them by his friend Professor Henry Drummond. He was recently president of the Indian Association, and was a warm friend of all students of Eastern races studying in Edinburgh. He was a constant supporter of St. George's United Free Church, in which his brother-in-law, Dr. Alexander White, was minister. In foreign missionary enterprise Dr. Barbour took a special interest, and his name was for many years associated with the Scottish Auxiliary of the Chinese Mission of the English Presbyterian Church, in the presidency of which he succeeded his father.

Medical research remained always very near his heart. The Freeland Barbour Fellowship, managed by the Royal College of Physicians, was founded by him in memory of his father, for investigations conducted in the laboratory of the Royal College of Physicians at Edinburgh. In the University of Edinburgh, also, he founded a Freeland Barbour Fellowship, to be awarded in each alternate year to the graduate who had taken the highest place in anatomy, physiology, and pathology, in order that he might be able to carry out research in the subject of midwifery. In the University of Toronto he had also founded a scholarship. Medical institutions, such as the Royal Infirmary of Edinburgh, the Royal Hospital for Sick Children, the Maternity Hospital, and many others, benefited greatly from his judicious munificence.

In 1889 Dr. Barbour married Margaret Nelson, elder daughter of the Hon. George Brown of Toronto. He is survived by his widow and by two sons and three daughters.

The interment took place in the Dean Cemetery, Edinburgh, on June 15th, and was attended by a large number of representatives, including Sir Alfred Ewing, Principal of the University of Edinburgh, the Fellows of the Royal College of Physicians, who wore their academic robes, and representatives from the Royal Infirmary and other institutions in which the late Dr. Barbour had been specially interested.

The following well known foreign medical men have recently died: Dr. EDMOND ROUFFART, founder of the Belgian Society of Gynaecology and Obstetrics, member of the Royal Academy of Medicine, and formerly Senator of Brussels, aged 71; Professor GIUSEPPE MARCARINI, an eminent surgeon of Genoa; and Dr. PETRINI-GALATZ, formerly professor of dermatology at Bucarest.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE chief business of the House of Commons this week has been to pass the Trade Disputes and Trade Unions Bill through its remaining stages. The Government reserved June 24th for the report and third reading of private members' bills, one of them being the Midwives and Maternity Homes (Scotland) Bill.

In the House of Lords, on June 20th, Lord Cave outlined the Government's scheme for a reformed Second Chamber with half the numbers of the present House, some to be elected by the Peers from their own number and the rest to be nominated by the Prime Minister for a period of twelve years. On Tuesday the Bishop of Liverpool, by moving the second reading of the Liquor (Popular Control) Bill, initiated a debate on temperance, in which Lord Dawson of Penn joined.

A meeting of the Parliamentary Medical Committee has been called for June 30th, and Dr. Cameron, of the Metropolitan Asylums Board, may then address the Committee on vaccination.

On June 21st Mr. Rhys Davies presented a bill making further provision with respect to procuration, trading in prostitution, and kindred offences, and to disorderly houses and other premises. The bill would also extend and amend the Extradition Act, 1870, The Children (Employment Abroad) Act, 1913, and the Criminal Law Amendment Act, 1922. The bill was read a first time.

Liquor Control Bill.

Speech by Lord Dawson of Penn.

In the House of Lords, on June 21st, the debate was resumed on the second reading of the Liquor (Popular Control) Bill, introduced by the Bishop of Liverpool. It proposed to give to boroughs with over 50,000 inhabitants, and licensing districts, the right of deciding periodically whether they are to have no change from the present system of competitive ownership of the liquor trade, or whether the trade is to be reorganized under a system of public control somewhat on "Carlisle" lines, or whether the sale of intoxicants is to be abolished.

Lord Dawson of Penn said that the most drastic proposal of the bill was the option of prohibition. That was not necessary to the fabric of the bill, and was put in to satisfy the extreme temperance reformers, who had made no secret of their intention to withhold their support from the measure if it did not contain that option. If it were adopted there would be no opportunity for going back if it turned out to be a mistake. It might be too soon to say whether prohibition had or had not been successful, but so far as it had gone it seemed to show the need for caution before touching it in any way. In countries where it had been adopted it had produced bootlegging and more drinking among the young than existed before. A fresh view ought to be taken of the liquor question and the matter approached in a fresh way. Duress was the curse of this bill. If by common agreement the causes which were known to be increasing temperance were fostered, a result would be obtained in ten years which would not be gained in a generation by any other means. There was a serious danger of temperance reformers being the greatest obstacles to reform. There was ample evidence that the country was becoming more temperate. It was only necessary to go to the theatres, the cinemas, to the big restaurants, and to the bank holiday resorts to see that the amount of actual drunkenness was extremely little. He had never seen in recent years drunkenness of so terrible a character in this country as he had seen in prohibition countries. The evidence with regard to disease due to alcohol showed a steady improvement, so much so that the provisions made in the hospitals years ago were found to be no longer necessary. But there could be a great deal of harmful drinking without actual drunkenness and disease, and he was with the supporters of the bill entirely in saying that there was too much drinking still, and that efforts should be made to hasten the movement towards greater temperance. There were grounds for encouragement in observing the habits of a large and important section of the community—the people with moderate means, who gathered in popular restaurants which had a full licence. A full inquiry three years ago showed that of the people who congregated in certain big restaurants 75 per cent. had no alcohol at all, and, of the 25 per cent. who did drink, no less than three-quarters were drinking either light wine or beer, and only one-quarter whisky or port. That was a very striking testimony to the progress of temperance and of real sobriety. He had made it his business, when he knew this debate was coming on, to inquire whether these figures had become better or worse. The answer was that in one restaurant the number of people who took liquor had gone down from 25 to 17 per cent., and in another it had fallen to 7 per cent.

In all investigations as to the progress or not of sobriety, it was the best and the fair way to make a division between the

age of 35 and under 35. After 35 people's habits were formed, and if a man became a drinker by then he was very likely to go on. What really mattered in this country was What were people doing who were under 35? He adopted that method in his next inquiry, and went among the clerk class. Taking the clerks over 40, he found that 21 per cent. were abstainers, and 40 per cent. of those under 40 were abstainers. That was in keeping with his own observations. The clerk class in this big city, especially the younger ones, drank remarkably little. If inquiries were made of those responsible for the young soldiers the same thing would be found. For instance, at Aldershot these young men came from their heavy drill in the morning about 11.30 or 12, and went helter-skelter to the canteen. Five out of six of them went to the dry canteen. It was an interesting fact that those who went to the dry canteen always asked for something sweet, showing that for the young sugar was a very good substitute for alcohol. He asked some of his friends in the army recently, and they told him, "It is absolutely true that the young soldier does not drink; you have only got to look at him to see that."

He had made it a point in the last few weeks of asking his business friends as to the drinking over business. It was quite true that it was far too rife. It was an essentially damaging form of drinking, because it involved drinking on an empty stomach, just like the cocktail habit; but it was going out, and was far less frequent than before.

In his inquiries he realized that he had not got down to the unskilled labour class, so he set to work, with some coadjutors well qualified in finding out what people did and did not drink, because in any big hospital the medical officers got to know what an answer meant, whether it was "Yes" or "No," pretty quickly. The records of something between 1,500 and 1,600 people of the unskilled labour class were examined. The results were so striking, and so much better than he expected, that he handed the papers to an actuarial friend. He (Lord Dawson) divided the total into abstainers, the temperate, and the imperfectly temperate. He was up against the difficulty as to what to make the threshold of temperance. He chose the figure 2, by which he meant to denote two drinks. He took the standard of a pint of beer or one glass—not a full one—of whisky. He found that if he took people under 35 and added together the temperate people and the abstainers they amounted to 90 per cent., and the imperfectly temperate were 10 per cent. There was a change after 35, when the temperate people and the abstainers came to 71.5 per cent. and the imperfectly abstaining people to 28.5 per cent. Taking abstaining people alone, under 35 there were 51 per cent., and over 35 only 22.5 per cent.

It was open to people to say that the reason why the percentage of temperate persons was less after 35 was that people grew into drink. That was a fallacy. People did not become drunken or intemperate if once they had acquired temperance habits up to 35. It was comparatively rare for intemperance to break out after that age, except under stress of circumstances wholly outside the present consideration. That gave food for thought, and showed that our people were becoming steadily more sober in their attitude towards alcohol. It was really an outrage to call this country a non-sober country.

It was said that the diminution of drinking was due to restricted hours and higher prices. He agreed that restricted hours promoted temperance. He would support the continuation of the restriction of hours, provided that it was made uniform in all districts; but the influence of higher prices was not worth talking about. Did a man stop drinking because he had no money? He made his wife go without money. If drink had got such a hold on him he would not stop because of the price. What had produced the change to which he had referred was better housing; this was shown by the fact that so soon as better housing was obtainable there was an improvement in respect to drinking. The next fact was the increasing love of fresh air and the constant desire on the part of the people to be out in the country. Then there was the greater companionship of men and women; but he would put above all others the very great love of physical fitness at the present time. The women had become more athletic owing to the adoption of more sensible clothing, and that had created a desire for physical fitness. Advantage should be taken of all those forces which he had mentioned. Education should be fostered, and the improvement of houses should be continued, and the chances of those who were less well off to enjoy games and outdoor sports should be increased.

If all these things were done for ten years, and if health lectures were given all over the country, then, not by fanatics preaching against the evils of this, that, and the other, but by people teaching what health meant, what good food meant, and what the disadvantages of alcohol really were, as well as its advantages, an appeal would be made to the convictions of the people, and far greater success would attend any campaign for temperance than by the provisions of a bill such as that before the House.

The Earl of Onslow said that the Government were heartily in concurrence with the wishes of the supporters of the bill, and were no less desirous than they for judicious reform. They could not, however, at the present time assent to a measure which involved the reopening of the controversial question of the amendment of the licensing laws. The report of the Southborough Committee on disinterested management had only been in the hands of the Government a short time. There were other matters connected with the licensing laws, not dealt with in that report, which it would be necessary to consider before any Government could give a pronouncement on the subject.

The debate was eventually adjourned.

Shop Acts, 1920 and 1921.

At the meeting of the Shops Committee on June 16th, evidence urging that the Early Closing Acts should be made permanent was given by representatives of the Joint Parliamentary Committee of the retail repairing boot trade (employers and employees). The witnesses declared that their trade was one in which boots, dusty and germ laden from the streets, came into direct contact with the worker. Consumption was rife amongst the operatives, as also were gastric troubles. The witnesses stated that their organization had taken medical surveys of consumptives in the trade. The Boot Trade Benevolent Society had recently made arrangements with a convalescent home for the treatment of consumptive cases. Of the deaths among boot and shoe trade operatives an average of 23.7 per cent. were due to tuberculosis.

Mr. Huntrods, president of the Incorporated Society of Pharmacy and Drug Store Proprietors in Great Britain, in a letter, argued that the necessary calls on pharmacy proprietors out of hours were very few, and that doctors had the prerogative under the National Health Insurance Act of supplying patients with really necessary medicine.

The Committee adjourned till June 30th, which will be its last public meeting.

Public Health in India.

On June 17th the House of Commons considered the Indian Estimates in Committee. Mr. Wardlaw Milne said conditions in India were better than ever before. The number of people who died of famine or starvation was infinitesimal. Immense work had been done—largely by British enterprise and under British leadership—for the relief of famine areas, by the promotion of irrigation schemes, and to deal with outbreaks of plague and cholera. Mr. Saklatvala referred to what he termed the crushing infantile death rate in Bombay. Mr. Pilcher said that the white population in Bombay, which was a tiny, infinitesimal minority, had done everything it could to improve the shocking slum conditions which existed in the city. Early marriage, when the girl was only 13 or 14, was the practice in India; it was believed that a child must be born of such a marriage as soon as possible, and that as many children as possible should be born. These were the root causes of the misery, not only in India but in China.

Mr. Johnston said that in Bengal 71 per cent of the males died before they reached 30. Malaria was rampant, and even if those attacked did not die they were weakened by it. It was questionable whether one man in a thousand of the agricultural population of India went to sleep at night after having eaten one decent meal during the day. Earl Winterton, in a brief reply at the end of the debate, said it had been agreed that when the estimates were taken again he should make a general statement on Indian matters. An amendment to reduce the vote was rejected by 173 votes to 45, and the debate was adjourned.

Poisoning of "Vermin."

On June 17th the Protection of Animals (Amendment) Bill was considered in Committee; the bill amends the Protection of Animals Act, 1911, which makes it an offence to put down poison. Dr. Shiels moved two amendments, the first of which substituted for the word "vermin," which may, under the bill, be destroyed by the laying of poison, the words "insects and other invertebrates, rats, mice, and other small ground vermin." He said that on the second reading he objected that "vermin" was too vague. He understood that his amendment was agreeable to the promoters of the bill. His second amendment was to include wild birds among creatures to be safeguarded from poison. Both amendments were accepted, and the bill passed through Committee.

Vaccination of Small-pox Contacts.—Answering Mr. Groves, on June 20th, Sir Kingsley Wood said that of patients recently admitted to the small-pox hospitals at Dartford and Yeading only one (as to the diagnosis of which there was some doubt) was vaccinated after removal to hospital. In this case the vaccination was unsuccessful. None of the patients were vaccinated after they were discovered to be suffering from small-pox. Two of the patients were vaccinated after contact with a case of small-pox, but in both instances too late to protect them from the disease.

The London Lock Hospital.—Answering Dr. Fremantle, on June 16th, Mr. Chamberlain said the London Lock Hospital was a voluntary one, and the general management of voluntary hospitals did not come under his review. Any grants to this hospital for specific services were made by local authorities, principally by the London County Council. The Council had given notice to withdraw its grant as a preliminary to a general review of its

arrangements for the venereal disease service. He had concurred in this proposed action. If the board of management asked for an inquiry into the general management of the hospital he would consider the request.

Notes in Brief.

Answering Dr. Vernon Davies, Commodore King said that 101 soldiers were invalided for valvular disease of the heart in 1926. Of these, 37 were under 21 years of age. During the present year to date 29 had been invalided, of whom 10 were under 21.

The Minister of Health doubts whether the time is ripe for a committee to inquire into the effect on the human system of noise and vibration. Some aspects of the question are receiving attention from the Industrial Fatigue Research Board.

Great Britain was free of foot-and-mouth disease from April 6th to June 16th, the longest period of freedom since 1921.

Thirty-nine cases of typhoid fever were notified in Gravesend during the five weeks ended June 11th. A representative of the Ministry of Health has visited the town.

Asked about the arrangements for aerating distilled water before supply to ships' companies, Colonel Headlam said the water was sprayed through special roses into tanks.

The Minister of Health is considering whether the warning "Unfit for babies," on tins of condensed skimmed milk should be made more conspicuous.

The Minister of Health is not prepared to amend the law so as to make it illegal for the vaccination of children to be a condition in a tenancy agreement.

The statistics received by the Ministry of Health show a considerable decrease since 1911 in the death rate from tuberculosis in each of the six counties of North Wales.

Answering Dr. Vernon Davies, on June 20th, Sir W. Joynson-Hicks said the Government had not yet considered the unanimous recommendation of the Medical Research Council that the section of the Dogs Act, 1906, which forbids the use of stray dogs for research, should be repealed.

Answering Dr. Vernon Davies, on June 20th, Sir Samuel Hoare, in a written reply, said that 14 men were discharged from the Royal Air Force for diseases of the heart in 1926. Of these, 4 were under 21 years of age, and 2 of the 4 had a definite history of rheumatism. In 1927 to date 8 had been discharged, 2 under 21 years of age.

On June 21st Mr. Wellock withdrew the allegation he had made in a previous question that British military authorities were providing brothels for troops in China.

On June 21st Mr. McNeill told Captain Crookshank that holders of off-licences were not permitted to sell single half-bottles of spirits to their customers, even in case of illness. Certain members had put down for the Committee stage of the Finance Bill a clause proposing amendment of this law.

Medical News.

WE have received an illustrated pamphlet, entitled *Scotland's Wonderland*, describing Messrs. MacBrayne's steamship tours through the Western Highlands and Islands of Scotland. It gives a very complete account of the method of visiting these beautiful and romantic spots, together with the times and fares of the steamboats. It should be of great use to members of the British Medical Association who wish to extend their visit to Edinburgh in July. A copy can be obtained post free from Messrs. David MacBrayne, 119, Hope Street, Glasgow.

THE first annual Macalister Lecture of the London Clinical Society will be delivered by Sir Thomas Horder, Bt., M.D., at the London Temperance Hospital, Hampstead Road, N.W., on Thursday, July 7th, at 8.45 p.m. The subject of the lecture will be diet and dietists. A cordial invitation to the lecture is extended by the society to any medical practitioner.

MR. B. G. PETERS, M.Sc., has been appointed by the Grocers Company to a Grocers Research Scholarship in sanitary science, tenable in the division of medical zoology at the London School of Hygiene and Tropical Medicine.

THE DUKE OF CONNAUGHT, who for twenty years has been president of the Westminster Ophthalmic Hospital, will lay a commemoration stone in the entrance hall of the new building in Broad Street, Bloomsbury, on Thursday next, June 30th, at 4 p.m. The building has as yet only reached the first floor, but will eventually have eight stories; it is to be ready for occupation by March 25th, 1928.

THE Bearsted Memorial clinical theatre at the London Hospital will be opened by Viscount Bearsted on Wednesday, June 29th, immediately after the distribution of prizes.

A LECTURE entitled "Training defective children to become useful citizens," by Maria Montessori, M.D.Rome, D.Litt., will be given under the auspices of the London School of Medicine for Women, in aid of the Royal Free Hospital Centenary Fund, at the Æolian Hall, Bond Street, W., on Tuesday, July 5th, at 5.15 p.m. The chair will be taken by Lady Barrett, C.B.E., M.D., M.S., dean of the Medical School. Tickets for reserved seats (7s. 6d. and 5s.) may be obtained from the Medical School, 8, Hunter Street, W.C.1. Admission 2s. 6d.

DR. B. DUNLOP asks us to announce that on July 26th the Malthusian League (120, Victoria Street, S.W.1) will celebrate its fiftieth anniversary by a dinner at the Holborn Restaurant, and the public is invited to apply for tickets (10s. 6d.). Among the speakers will be Mr. H. G. Wells, Mr. J. M. Keynes, and Mrs. Annie Besant, who was the first secretary of the society.

THE Fellowship of Medicine and Post-Graduate Medical Association announces that Dr. C. M. Wilson will give a clinical demonstration at St. Mary's Hospital on June 29th, at 2 p.m., and at 1.30 p.m. that day Mr. Cairns Forsyth will give a surgical demonstration at the Royal Waterloo Hospital. On June 29th Mr. A. D. Griffith will give a demonstration in ophthalmology at the Royal Eye Hospital at 3 p.m. All these demonstrations are free to members of the medical profession. An all-day intensive course will be provided by the staff of the National Hospital for Diseases of the Heart from July 4th to 16th, and the daily sessions will start at 10 a.m. and continue until 4 p.m. As the course is limited to twenty, early application is desirable. For those desiring instruction in medicine, surgery, and the specialties the Prince of Wales's General Hospital undertakes an intensive two weeks' course from July 11th; the clinical practice of the hospital is open to those taking the course, and on each of the Saturdays visits may be paid to the mental hospital at New Southgate and the fever hospital at Homerton. From July 11th to 30th inclusive a course in proctology will be available at St. Mark's Hospital. Two demonstrations weekly (Wednesdays and Saturdays) will be given at the Park Fever Hospital from July 13th to 30th inclusive. From July 4th to 30th the West End Hospital for Nervous Diseases will hold a late afternoon course daily at 5 p.m. Copies of all syllabuses and the *Fellowship Journal* may be had from the Fellowship of Medicine, 1, Wimpole Street, W.1. A general course of work is also provided at the associated hospitals, for which a comprehensive ticket is issued and a separate programme published.

THE new Queen Alexandra wing of the Ealing King Edward VII Memorial Hospital was opened by Princess Mary, Viscountess Lascelles, on June 8th. The new wing, erected at a cost of £25,000, consists of two large wards of twenty beds each, with the requisite sanitary block, sixteen additional bedrooms for the staff, and one new private ward.

THE foundation stone of the Nicoll memorial wing of the Queen Mary's Hospital for the East End was laid by the Lord Mayor of London on June 8th. The extension will provide accommodation for thirty-two extra beds, of which twenty will be allotted to casualty patients. It is intended to serve as a memorial to the late Dr. P. J. S. Nicoll, for many years chief honorary medical officer and vice-chairman of the hospital. The additions are estimated to cost £35,000.

THE President of the French Republic has conferred the Order of Chevalier of the Legion of Honour upon Dr. Eleanor Hodson, of Canterbury, in acknowledgement of the service she rendered France as a member of the British League of Help. Dr. Hodson has already received the French Médaille d'Honneur.

MANY of our readers know of the medical visits (Voyages d'Etudes Médicales) to French health resorts arranged year by year by the Faculty of Medicine in Paris; there will be such a visit this year to the Eastern Pyrenees. The party will assemble at Balaruc on September 1st and go on that evening to Lamalou. A dozen resorts will be visited and the party will reach Luchon on September 9th; it will separate on the following day at Superbagnères. The greater part of the journey will be made by motor car. Further particulars can be obtained from Madame Juppé-Blaise, Federation of the Health Resorts of France, 19A, Tavistock Square, London, W.C.1.

THE late Mr. Lewis Spokes Richards of Edgbaston has bequeathed £1,000 each to the Birmingham Children's Hospital and the Royal Orthopaedic and Spinal Hospital, Birmingham, and £500 each to the Birmingham Eye Hospital and the Birmingham Ear and Throat Hospital. Under the will of Mr. William Bedlam of Littlehampton, who died in March last, the Littlehampton and District Hospital receives £1,000 and the Crawley Cottage Hospital £300.

A TOTAL of 6,787 cases of puerperal fever was notified in Germany in 1926, as compared with 7,003 in 1925; the incidence is highest in Hamburg.

TWELVE cases of trichinosis with two deaths occurred in Germany, exclusive of Mecklenburg-Schwerin and Hesse, in 1926, as compared with nine cases in 1925. Eight occurred in the Coblentz district, two in Bavaria, and two in Saxony.

THE cases of small-pox reported in the United States in 1925 numbered 41,643 with 702 deaths. In the last eight years Illinois alone has had over 30,000 cases, representing a community loss of no fewer than three million dollars. In the ten-year period 1916–25 Massachusetts had 253 cases of small-pox, with a community loss of 25,300 dollars.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the BRITISH MEDICAL JOURNAL must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the JOURNAL, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the BRITISH MEDICAL JOURNAL are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 4737 Dublin), and of the Scottish Office, 6, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 4361 Central).

QUERIES AND ANSWERS.

FACIAL ACNE.

"F.R.C.P." asks for advice in treatment of acne of the face in a young woman. Manganese, autogenous and mixed vaccines, unguentum iodi denigrescens, and ultra-violet light have been tried without success.

RECURRENT EPISTAXIS.

DR. O. W. D. STEEL (Llanbister, Penybont) asks for suggestions for the treatment of a girl, aged 7, who has suffered for two years with bouts of nose bleeding. At first the interval was three months, now it is only five weeks. Each attack lasts four days and there are three or four haemorrhages in twenty-four hours, chiefly by night. A year since she was seen by a rhinologist, who removed adenoids, but could find no local lesion to account for the bleeding. The coagulation time of the blood is normal. She has had calcium and adrenaline. Her father suffers from chronic bronchitis, eczema, and nasal polypus. Hitherto the haemorrhage has not been so severe as to cause anaemia. The fear and apprehension are doing harm, for she can tell when the bleeding is about to come on. She suffers nearly every spring from pneumonia.

TREATMENT OF BURNS.

DR. M. K. ROBERTSON (Kew Gardens, Surrey) writes with reference to Professor Fraser's lecture on burns (JOURNAL, June 18th, p. 1089): I find that before I see a burn it has always been covered with carron oil, olive oil, flour, or, as in a case I saw last week, a mixture of all three. Can anyone give me a satisfactory method of removing this oily mess, so that I may try one of the more modern methods?

BOOKS ON CHEMISTRY.

A MEMBER of a firm of food manufacturers asks whether any manual has been published within recent years on the lines of Attfield's *Chemistry: General, Medical, and Pharmaceutical* (1904).

*** Few of the more recent books on chemistry resemble Attfield's in its method of treating the subject. The expansion of chemistry and its cleavage into diverse branches have rendered Attfield's method incompatible with the newer plan of teaching, which has necessarily become more narrowly academic than before. Unless our correspondent obtains a comprehensive book such as Thorpe's *Dictionary of Applied Chemistry*, he may find it necessary to buy more than one, and may find the following deserving of examination: *Pharmaceutical Chemistry*, Bentley and Driver (Oxford University Press); *Chemistry, Inorganic and Organic*, Bloxham (Churchill); *Modern Inorganic Chemistry*, Mellor (Longmans, Green).

LETTERS, NOTES, ETC.

UNITED HOSPITALS' SPORTS.

THE fifty-sixth annual meeting of the United Hospitals' Athletic Sports was held at the Crystal Palace on the afternoon of June 15th. The weather was fine, the ground in good condition, and there was a fair attendance. Among those present were the President of the club (Dr. H. Morley Fletcher), Dr. Arthur Voelcker, who presented the prizes, Mr. E. B. Turner, who acted as timekeeper, Dr. Anderson, Deputy Medical Secretary of the British Medical Association, Dr. Scott and Mr. Stratford, secretaries of the Metropolitan Counties Branch. Dr. Anderson and Dr. Scott assisted in judging. The chief events, with the winners, were as follows:

One Mile.—R. A. P. Hogbin (Guy's); time, 4 min. 40⅘ sec.
100 Yards.—W. Hertzog (Guy's); time, 10⅖ sec.
Long Jump.—R. St J. Honner (London); 22 ft. 1 in.
Half Mile.—H. B. Stallard (St. Bart's); time, 2 min. 4 sec.
Putting the Shot.—W. Hertzog (Guy's).

The *Princess Louise Cup*, for the best individual performance, was presented to W. W. Craner (London) for winning the Quarter Mile race in 52 seconds.

The Cup given by Dr. C. F. T. Scott to the Metropolitan Counties Branch of the British Medical Association, to be presented to the best all-round athlete, was won by W. Hertzog (Guy's).

The Relay Race was won by St. Bartholomew's, and the Tug-of-war by the London Hospital.

MEDICAL GOLFING SOCIETY.

THE Medical Golfing Society held its annual summer meeting on June 16th at Walton Heath. All competitors were the guests of Lord Riddell and thoroughly appreciated his kind hospitality. There were over 100 entries. The competitions resulted as follows:

Lancet Challenge Cup.—H. T. P. Kolesar.
Henry Morris Challenge Cup.—E. Playfair.
Milsom Rees Challenge Cup.—V. E. Negus.
Class I.—First Prize: Sir Kenneth Goadby tied with A. W. Soper. *Best last nine*: H. D. Gillies.
Class II.—First Prize: H. A. Chodak Gregory tied with G. Dawson. *Best last nine*: H. L. Hatch.
Foursomes.—These were won by J. O'Malley and W. Tindal Atkinson.

ILLUMINATION FOR FINE WORK.

AT the end of last year the Home Office published a report describing an inquiry made by Mr. H. C. Weston and Mr. E. K. Taylor on the lighting of printing rooms where hand composing was carried on. This was fully noticed in our issue of December 4th, 1926 (p. 1065). Mr. Weston has recently given an address at a combined meeting of the Illuminating Engineering Society and the Joint Industrial Council of the Printing Trades of the United Kingdom, in which he discussed the report. The investigations, he said, were preparatory to the formulation of definite standards of artificial illumination for specific processes. The work chosen as suitable for the first experiments was type-setting by hand. Different illuminations on composing frames were taken, and the effect upon the speed and quality of the work noted. The test extended over a couple of days, and the compositors were employed in setting 7-point type (similar to that used in this note). One fact which emerged was the effect of inadequate illumination in producing unnecessary fatigue; at the feebler illuminations the number of typographical mistakes was greater in the afternoon than in the morning, but this was no longer the case when the illumination was raised to a certain level (14 foot-candles). With an illumination of 7 foot-candles the rate of output was 10 per cent. below that obtained with a higher illumination. The best illumination for type-setting was found to be 20 foot-candles on the composing frames, and with this lighting the production was equal in speed and accuracy to that obtained in good daylight. The lighting of composing machines was scarcely less important, for the linotype or monotype operator needed good illumination to read his "copy," and if the matrices on the linotype and the small closely arranged figures on the drum of the monotype machine were to be seen easily an illumination of 20 foot-candles was not excessive. In one experiment tinted light was used, the fitting consisting of a white enamelled opaque bowl surmounted by a trumpet-shaped pale blue glass, intended to give approximately daylight correction without the coldness of north light. The compositors declared this method of lighting to be the best they had tried so far as restfulness and absence of glare were concerned, but they found it difficult to see old type, owing to the relative absence of shadows. Mr. Weston urged that the provision of adequate and suitable lighting in factories and workshops would benefit industry rather than impose an additional burden upon it. He agreed, however, that a certain number of industrial processes involved work of so fine a character that no kind of illumination would enable them to be carried out with entire efficiency and comfort, and in such cases the illuminating engineer could do no more than install really good lighting, and the ophthalmologist must be relied upon for further help in reducing strain associated with the work. In some industries the operatives had been provided with magnifying spectacles specially prescribed. Men with normal sight, however, did not appear to require magnifying glasses, and there is, or was, a reluctance on the part of compositors to resort to glasses, owing to the impression that they would be taken as evidence of failing sight and consequent unfitness. The fallacy of this idea, Mr. Weston urged, was apparent, and the use of glasses, when necessary, ought to be regarded as a natural and valuable means of maintaining, and even increasing, productive capacity.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 42, 43, 46, and 47 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 44 and 45.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *272*.

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